Maritime Heritage Minnesota

Ann Merriman
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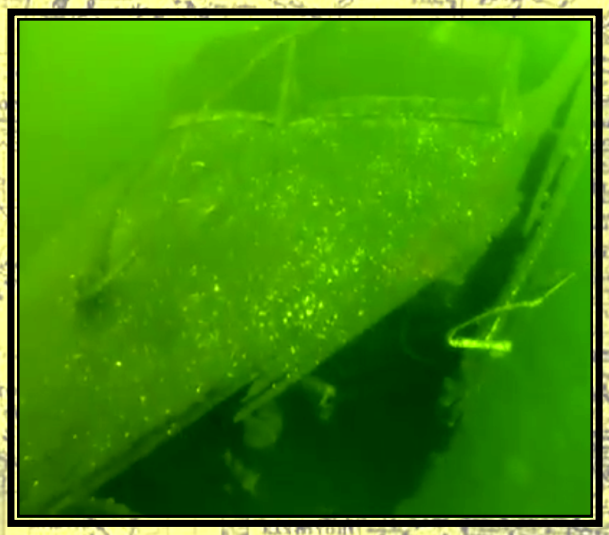
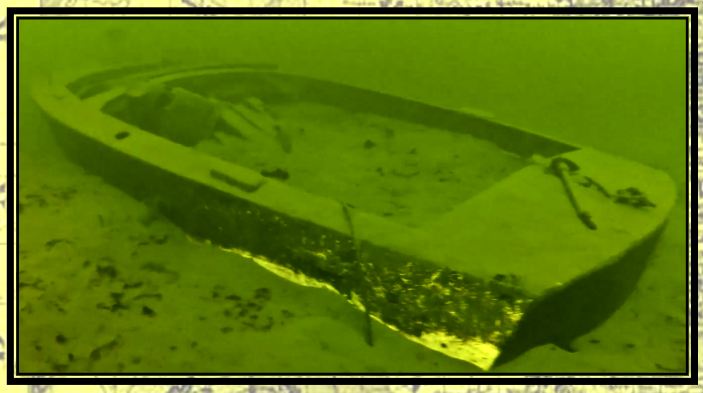
Lake Minnetonka Nautical Archaeology 2 Project Report





Acknowledgments

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Cover: Damaged Bow Wreck (by Ed Nelson), Owens Deluxe Cruiser Wreck (by Mark Slick), Correct Craft Aqua Skier Deluxe Wreck (21-HE-424, by Kelly Nehowig).

CLEAN WATER LAND & LEGACY AMENDMENT

MINNESOTA HISTORICAL & CULTURAL HERITAGE GRANTS

Left: Volunteer Ed Nelson and MHM archaeologist Christopher Olson returning from a dive.

Below: Volunteer Mark Slick and Christopher Olson preparing to dive.

Above: MHM's Commodore Mike Kramer on MHM's boat.

Below: Archaeologist Ann Merriman operating MHM's boat in West Arm.

Above: Volunteer Josh Knutson surfacing from a dive.

Right: Mike Kramer, volunteer Kelly Nehowig, Christopher Olson, and Ann Merriman on MHM's new boat (by Mark Slick).

Introduction

Shipwrecks are not commodities. Every artifact, be it a shipwreck, solitary anchor, or bottle tells a story. Removing or otherwise disturbing artifacts can obliterate that story. Nautical archaeological sites – wrecks – and maritime archaeological sites – piers and other objects – are finite and significant submerged cultural resources – otherwise known as underwater archaeological sites. Nautical, maritime, underwater, maritime terrestrial – MHM deals with all of these types of sites throughout the State of Minnesota. Maritime Heritage Minnesota's (MHM) mission is to document, conserve, preserve, and when necessary, excavate these finite cultural resources where the welfare of the artifact is paramount. MHM is concerned with protecting our underwater and maritime sites – our shared Maritime History – for their own benefit in order for all Minnesotans to gain the knowledge that can be obtained through their study. MHM's study of wrecks does not include the removal of artifacts or damaging the sites in any way. MHM does not raise wrecks or 'hunt' for 'treasure'. Submerged archaeological sites in Minnesota are subject to the same State statues as terrestrial sites: the Minnesota Field Archaeology Act (1963), Minnesota Historic Sites Act (1965), the Minnesota Historic District Act (1971), and the Minnesota Private Cemeteries Act (1976) if human remains are associated with a submerged site. Further, the case of *State v. Bollenbach* (1954) and the Federal Abandoned Shipwrecks Act of 1987 provide additional jurisdictional considerations when determining State oversight and "ownership" of resources defined by law as archaeological sites (Marken, Ollendorf, Nunnally, and Anfinson 1997, 3-4). Therefore, just like terrestrial archaeologists working for the State or with contract firms, underwater archaeologists are required to have the necessary education, appropriate credentials, and hold valid licenses from the Office of the State Archaeologist (OSA).

MHM completed two side and down-imaging sonar surveys of Lake Minnetonka in September-November 2011 and May-June 2012 – the Lake Minnetonka Survey 1 Project (LMS-1) and the Lake Minnetonka Survey 2 Project (LMS-2). Prior to MHM's two comprehensive surveys, there was one recognized nautical archaeological site on the lake bottom – Streetcar Boat *White Bear* (21-HE-281) – although another five wrecks were known. As a result of the sonar surveys, MHM completed archaeological site forms for the other five wrecks: Streetcar Boats *Como* (21-HE-397) and *Hopkins/Minnetonka* (21-HE-396), sternwheeler *George/Excelsior* (21-HE-399), tug *Hercules* (21-HE-398), and sidewheeler *Minneapolis* (21-HE-403). Additionally, MHM acquired an archaeological site number for the Big Island Steamboat Pier, Amusement Park, and Veteran's Camp (21-HE-402). Further, during the LMS-1 Project MHM attained site numbers for three previously unknown wrecks identified as the St. Albans Bay Wreck (21-HE-400), the Wayzata Bay Wreck (21-HE-401), Wreck 1 (21-HE-404), and located the Echo Bay Wreck (Anomaly 52). During the LMS-2 Project MHM recognized the existence of the Spring Park Bay Wreck (Anomaly 91) and the West Arm Pontoon Boat Wreck (Anomaly 83), but the sonar data recorded about these sites – and the Echo Bay Wreck – did not contain enough information to designate them as archaeological sites.

In October 2012 and from mid-May to early July 2013, MHM and a select group of ethical volunteer divers investigated a prioritized list of anomalies and wreck sites using SCUBA. In addition, the Hennepin County Water Patrol (HCWP) partnered with MHM to visually record two wrecks that served as test subjects for their newly acquired Remotely Operated Vehicle (ROV). The results of that project were presented in the *Lake Minnetonka Nautical Archaeology 1 Project Report*. During that research, MHM nautical archaeologists and volunteer divers investigated the Wayzata Bay Wreck, St. Albans Bay Wreck, the Owens Landau Wreck (formerly the Spring Park Bay Wreck), the Echo Bay Metal Barge Wreck (formerly the Echo Bay Wreck), and 17 other anomalies located during the LMS-1 and LMS-2 Projects. The HCWP's ROV recorded video of the Owens Landau Wreck and Wreck 1. This footage allowed MHM to identify Wreck 1 as the tug *Priscilla*. The other 17 anomalies consisted of the Gideon Bay Wreck (21-HE-415, formerly Anomaly 63), Wayzata Bay Motorized Ice Boat Wreck (21-HE-416, formerly Anomaly 21.2), Wayzata Bay Rowboat Wreck (21-HE-417, formerly Anomaly 21.1), Capsized Wooden Boat Wreck (21-HE-418, formerly Anomaly 28), Chris-Craft Sportsman Wreck, (Anomaly 54), Crystal Bay Houseboat Wreck (Anomaly 4), Aluma-Craft Model R Wreck (Anomaly 20.1), Lund Aluminum Fishing Boat Wreck (Anomaly 69), Mercury Monterey Four Door Sedan (Anomaly 21), a Pontoon Raft (Anomaly 2), and a sunken bog (Anomaly 1). Anomaly 118 was identified as two lines of rocks and Anomalies 3, 22, 102, 103, and 106 were determined to be false sonar returns. In summary, at the end of the LMS-1, LMS-2, and LMNA-1 Projects, a total of 13 wrecks were confirmed as nautical archaeological sites and have site numbers from the OSA, an additional six wrecks were confirmed but not assigned site numbers (not including the West Arm Pontoon Wreck), and three other underwater or maritime sites – one with a site number – were identified by MHM.

Preface

Before the findings of the Lake Minnetonka Nautical Archaeology 2 Project (LMNA-2) are described and analyzed, an overview of certain aspects of Lake Minnetonka's maritime history must be explored. Due to the nature of many of the wrecks MHM has located and identified during Phase 1 Reconnaissance dives as part of the LMNA-1 and LMNA-2 Projects, an understanding of Lake Minnetonka's boating history, safety, and regulation over the last 70 years provides context to much of the nautical archaeological data collected to date (for the maritime history of Lake Minnetonka in the 19th and early 20th Centuries, see the LMS-1 and LMS-2 Reports). In a broader sense, the following synopsis of watercraft regulation development and enforcement can be extended to understanding Minnesota as a whole when it comes to similar wrecks located in lakes and rivers in the future.

The Hennepin County Sheriff's Water Patrol and the Beginning of Boat Safety Regulations and Enforcement in Minnesota

The powerboats of today evolved from the low-horsepower, heavy, and relatively slow steam launches of the late 19th and early 20th Centuries. The development of the gasoline engine in the 1890s meant traditional steam launch hull shapes were

inadequate for the greater power offered by these engines. With the rise in popularity of racing competitions powered by boats with gasoline engines during the 1910s and 1920s, pioneering naval architects such as John Hacker and Chris Smith developed vessels with V-bows, hard chines, and flat bottoms that met with little resistance going through the water. This design is common in boat designs of today. During the 1920s the number of privately owned powerboats increased dramatically because they were more and more affordable to average Americans. Though the Depression saw the demise of many small boat-building firms, the post-World War 2 era of prosperity brought with it a new demand for fast powerboats.

By the mid-1950s ownership of personal watercraft by residents around Lake Minnetonka (and in Minnesota in general) was undergoing a surge. In spring 1956, boat yards around Lake Minnetonka – All Sports, Inc., Cochrane's Boat Yard, Minnetonka Boat Works, Richards Marine, Tonka Bay Boat Works – were bustling with activity. New boat sales, used boat sales, and the 'fitting out' of dry-docked vessels at these busy boating establishments led one of Cochrane's long-time employees to muse "Figure it out yourself. There are...110 miles of shoreline around Minnetonka, and everyone who lives on the shore as well as those half a mile back have boats of some kind. And if they haven't owned them in the past, they're getting them this year". It was estimated that there were more than 500 cruisers in the 18-50 foot range, 600 smaller runabouts, about 100 sailboats, and uncountable rowboats, canoes, skiffs, and flat-bottomed boats on Lake Minnetonka. With these numbers in mind, it is not surprising that the Hennepin County Sheriff teamed up with local residents around Lake Minnetonka to form a Lake Patrol. Hennepin County Sheriff Captain E. R. Wenell recognized that "Lake Minnetonka has been getting to be a bigger and bigger problem every year". The towns and communities around the lake that comprised the 'League of Lake Minnetonka Municipalities' (LLMM), along with the Sheriff's Office, wrote a Uniform Code of Regulations to promote boat safety, educate boaters, halt risky activities that endangered boaters, water skiers, and property, reduce pollution, and mandated the use of boat lights at night. Initially, the Lake Minnetonka Patrol (later the Hennepin County Sheriff's Water Patrol, HCSWP) utilized 21 boats owned by their cadre of 24 trained and deputized volunteers who were recognized by their patrol cap, badge, and the white and blue flags their boats flew that featured a sheriff's star. The lake was partitioned into five zones and each zone had five patrol boats on duty during the weekends and in the evenings beginning in early June 1956. The volunteers carried an array of safety equipment with each patrol boat that would assist them during water rescues and the flotilla shared one two-way radio among them. Early on the Lake Minnetonka Patrol's statistics indicate they were immediately busy giving warnings to boats anchoring without lights or being anchored inside a channel, for reckless boating and speeding, water skiing, tubing, and fishing in channels. The Patrol also rescued people from a sinking boat and responded to reports of drownings, boats stuck on 'reefs', and stolen watercraft and property. The group also cleaned obstructions out of bays and channels and they located a sunken boat in Carson's Bay. Initially the Lake Patrol did not issue tickets that resulted in monetary fines for violations, but by mid-July, the Patrol issued their first six tickets (*Minnetonka Herald* 1956a-i).

In late September 1956, the inaugural season of the Lake Patrol was lauded by local and State authorities – including the Governor and Commissioner of Conservation – and its first annual report boasted impressive statistics. In total, 28 boaters were arrested for speeding or water skiing through channels, drunken boating, and 'careless piloting', while 425 warnings were also issued. Further, the Patrol's activities were being extended over the winter due to the availability of equipment appropriate for use on a frozen lake. Throughout the season, the Patrol distributed copies of the Lake Minnetonka safety ordinances to ignorant boat owners as part of their education program and to assist in law enforcement. In the end, 80% of the Patrol's first year violators were boaters who did not live on Lake Minnetonka and after the season the ordinances were going to be more widely distributed. Other Hennepin County patrols had been organized over the summer and efforts also spread to Leech Lake in Cass County and Forest Lake in Washington County. Plans were also in the works for a patrol in Anoka County and on the Mississippi River. In addition to local acknowledgement of the Lake Patrol's success, the organization's efforts were being emulated as far away as Texas and significantly, the FBI published an article about the Patrol's policing (*Minnetonka Herald* 1956j).

Since 1956, newspapers have reported on the HCSWP's involvement in property theft cases (most often boats and motors), rescue, collision, injury, and sinking incidents, investigations of boat explosions, and comprehensive community-based boat safety programs. From these beginnings, the Lake Minnetonka Patrol served as a template for other counties and the State of Minnesota to develop boat safety programs and increase the enforcement of laws on the State's bodies of water. The establishment of a county-sponsored boat safety and law enforcement unit that was dependent on community involvement for its success set the groundwork for statewide uniformity of boat regulations. It is not an over-statement to suggest that the development, growth, and acceptance of the Lake Minnetonka Patrol's authority – and success – facilitated the creation of the Minnesota Boat and Water Safety Act (MBWSA) of 1959.

The Department of Conservation recognized the importance of the Lake Minnetonka Patrol's successful safety programs and use of volunteers. This cartoon was featured in a 1958 public relations campaign designed to acclimate Minnesotans to the up-coming Minnesota Boat and Water Safety Act (Department of Conservation 1958, Minnesota Historical Society, digitized by MHM).

Minnesota Boat and Water Safety Act of 1959

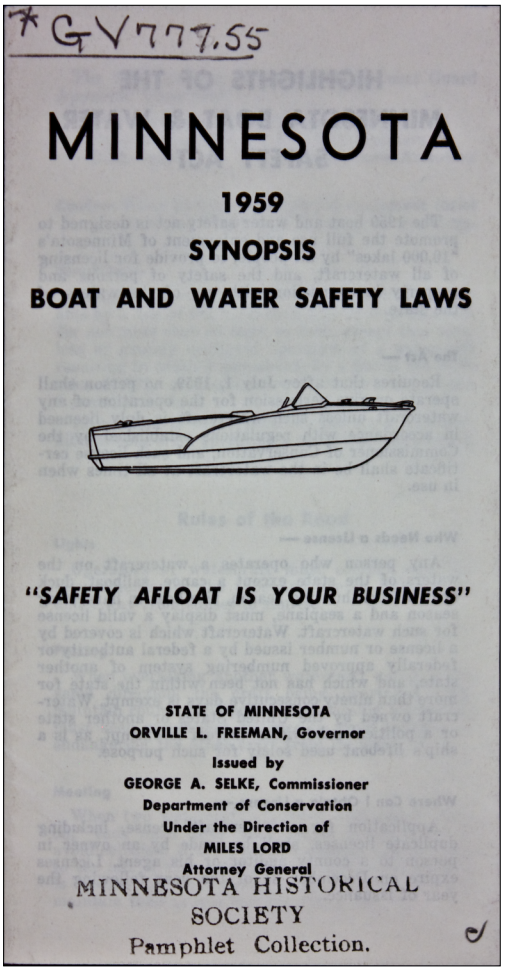
As MHM's nautical archaeologists and volunteers investigate more anomalies located during the LMS-1 and LMS-2 Projects, the number of sunken watercraft confirmed through SCUBA reconnaissance is increasing greatly. Many of these wrecks are craft of more recent manufacture than those traditionally thought of when a nautical archaeologist documents a 'shipwreck'. In Lake Minnetonka, MHM is identifying a significant number of wrecks that sank after July 1, 1959 – the date that the MBWSA went into effect. On that date, all motorized watercraft were required to display an identification (also called a license or registration) number on both sides of her bow. The original draft document of the 'Small Boat Act' has survived and it is interesting to compare the language produced by the Boat and Water Safety Committee (the group formed to suggest boat regulations in Minnesota) with the actual act passed by the Minnesota Legislature. Further, supporting documentation produced by the State indicates the Lake Minnetonka Patrol was the actual inspiration for statewide regulation and licensure of watercraft. A 1958 brochure from the Department of Conservation and the Boat and Water Safety Committee recognized that the Minnesota Legislature was stalled on action in relation to a comprehensive safety and regulatory act. The Department and the Committee exploited Minnesota's Centennial celebration that year to stress the efforts of the Lake Minnetonka communities and their successful volunteer cooperative in terms of boat safety. The brochure urged volunteer community action that would emulate the Lake Minnetonka Patrol's program – an effort also promoted by the State Sheriff's Association (Department of Conservation 1958). This pressure must have had an effect since the Minnesota Legislature passed the MBWSA soon after. For MHM, the most significant section of the law pertains to the mandatory display of a boat's registration number on both sides of the bow. The act reads in part:

The 1958 brochure promoting boat and water safety (Department of Conservation 1958, Minnesota Historical Society, digitized by MHM).

> Sec. 3. [361.43] **Watercraft licenses.** Subdivision 1. **General requirements**...no person shall after July 1, 1959, operate, or give permission for the operation of, any watercraft for which a license fee is prescribed...The license number assigned a watercraft shall remain the same if continually renewed, and the license of each watercraft shall purchase the watercraft license numbers assigned and affix same as may be prescribed by the commissioner....Subd. 6. **Expiration, renewal, new licenses.** Licenses...shall expire on December 31 of the year following the year of issuance and may be renewed in the manner provided for original issuance. No new license shall be issued for any watercraft which has previously been licensed under this act...unless notice of abandonment of such watercraft shall have been given...at least one year prior to the date of application for such new license or unless the application is accompanied by satisfactory proof that the watercraft has been continually outside this state at least one year

> prior...Sec. 25. [361.75] **Regulations.** The commissioner shall promulgate...regulations relating to the application for, and form and numbering of watercraft licenses and the size, form, reflectorize material and display of watercraft license numbers which shall comply with the requirements of the federal watercraft numbering system...Approved April 24, 1959 (Department of Administration 1959, 947-949, 956-957).

The Boat and Water Safety Committee's suggested language for the new law was more specific and simply expressed with statements like "every motorboat on the waters of this state shall be numbered. No person shall operate or give permission for the operation of any motorboat on such waters unless the motorboat is numbered in accordance with this act". Also clear was the suggestions that each "owner shall paint on or attach to each side of the bow of the motorboat the identification number in such manner as may be prescribed by rules and regulations...in order that it may be clearly visible. The number shall be maintained in legible condition....No number other than the number awarded to a motorboat or granted reciprocity pursuant to this act shall be painted, attached, or otherwise displayed on either side of the bow of such motorboat" (Committee of State Officials on Suggested Legislation, 1958).



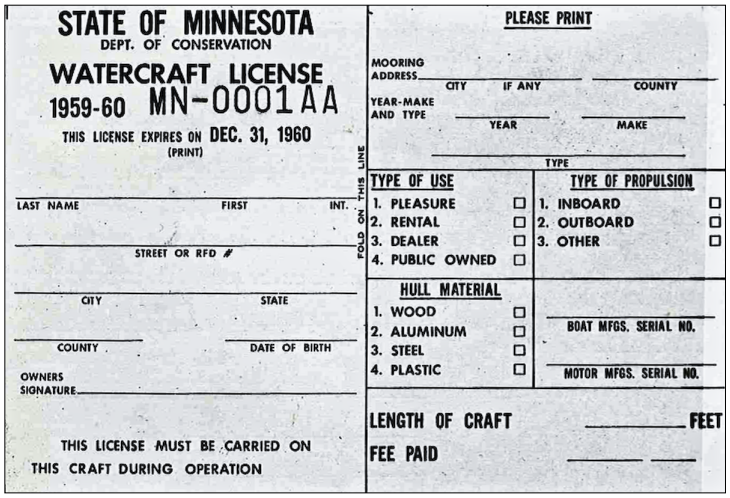
The 1959 informational brochure distributed to Minnesotans concerning the Boat and Water Safety Act (Department of Conservation 1959, Minnesota Historical Society, digitized by MHM).

When the MBWSA went into effect, the Department of Conservation led by the department's Commissioner (the *'commissioner'* referred to above) was responsible for assigning boat identification numbers and maintaining those records through the Minnesota Bureau of Boat and Water Safety (MBBWS). Boat owners were responsible for renewing their licenses and by mid-1964, the MBBWS was compelled to remind boaters through the media to check their expiration dates. It is interesting that although "current procedure gives boat registrants one full year to renew after license expiration" before a vessel owner would lose their number, "all unused boats must be renewed before December 31, 1964, in order to keep the same number". This grace period gave boat owners an extra year to keep their boat license if they had not, for whatever reason, launched their boat during 1964. In March 1972 the MBWSA was amended to include the licensure of canoes and sailboats in addition to motorized watercraft. In January 2013 the MBWSA was further amended to exempt non-motorized watercraft under 10 feet in length from licensure. In 1971 the Department of Conservation became the Department of Natural Resources (DNR) and from then, the DNR has been responsible for boat licensing in Minnesota. Unfortunately

for the maritime history of Minnesota, specific boat registration data from 1959-1972 have not survived (*Deephaven Argus* 1964; Department of Natural Resources 2013, 1; *Mound-West Tonka Minnetonka Sun* 1972; John Nordby, personal communication, 4 October 2013).

Boating education literature took many forms. Unfortunately this cartoon often comes true (Department of Natural Resources 1972, Minnesota Historical Society, digitized by MHM).

This lack of historical documentation has often made establishing the sinking dates of more recent wrecks difficult, even in comparison to wrecks that sank 100 years ago. Newspaper and other historical accounts of steamboat and gas launch accidents, explosions, or burnings are rather plentiful and detailed. In contrast, more recent accounts of boat accidents, explosions, and sinkings are often reported by the press, but the pertinent details such as watercraft model and age are not revealed – and many accidents and sinkings went unreported all together. MHM suspects that often authorities were not contacted after some incidents if alcohol was involved, boats were operating illegally without lights, or if a watercraft did not meet State standards for safety. Therefore, MHM has located several wrecks with registration numbers on their bow that are not recorded in the DNR database – meaning they sank between July 1, 1959 and 1972. An argument can be made that a wreck may have had a registration number on her hull but that it has not survived over the decades; MHM contends that if a vessel once had a number, remnants of at least some of either the port or starboard decals will survive in the cold, fresh water of Minnesota's lakes. However, year stickers that are of lesser quality than boat registration decals often do not survive or are illegible, but sometimes they do remain intact – and of course this greatly benefits our research efforts.


STATE OF MINNESOTA
DEPT. OF CONSERVATION
WATERCRAFT LICENSE
1959-60 MN-0001 AA
THIS LICENSE EXPIRES ON DEC. 31, 1960
(PRINT)
LAST NAME FIRST INT.
STREET OR RFD #
CITY STATE
COUNTY DATE OF BIRTH
OWNERS SIGNATURE
THIS LICENSE MUST BE CARRIED ON THIS CRAFT DURING OPERATION
FOLD ON THIS LINE
PLEASE PRINT
MOORING ADDRESS CITY IF ANY COUNTY
YEAR-MAKE AND TYPE YEAR MAKE TYPE
TYPE OF USE
1. PLEASURE
2. RENTAL
3. DEALER
4. PUBLIC OWNED
TYPE OF PROPULSION
1. INBOARD
2. OUTBOARD
3. OTHER
HULL MATERIAL
1. WOOD
2. ALUMINUM
3. STEEL
4. PLASTIC
BOAT MFGS. SERIAL NO.
MOTOR MFGS. SERIAL NO.
LENGTH OF CRAFT FEET
FEE PAID

The first watercraft license assigned in 1959 (courtesy of John Nordby of the Department of Natural Resources).

One beneficial tool MHM can use when determining a wreck's registration date is the actual sequence of numbers themselves. For example, during the initial implementation of the MBWSA in 1959, the license numbers were assigned in this order: MN 0001 AA, MN 0002 AA, MN 0003 AA and so on. With this known, the

last registration in the 'AA' series would be MN 9999 AA, suggesting that each double set of letters would have 9,999 licenses associated with them. However, the letter combination 'AO' was not used in assigning registration numbers because 'O' could be confused with zero. Therefore, in the 'A' series (AA-AN and AP-AZ) there would be 249,975 watercraft licenses issued. (John Nordby, personal communication, 3 October 2013; 11 December 2013). During the 1959-1960 registration period, an impressive 157,767 watercraft were licensed in Minnesota. During this time the last number and letter sequence to be assigned would have been MN 7782 AQ. Another indicator of early watercraft license numbers comes from the Minnesota Bureau of Boat and Water Safety in August 1964. The Bureau issued a warning to boat owners, a reminder to renew their boat licenses by year's end, including watercraft that had been assigned letter sequences within the BA-BH range that were issued in 1962. Therefore, any wrecks discovered whose letter series falls within that range were newly registered in Minnesota in 1962. Currently the DNR is assigning registration number combinations in the LB range (*Deephaven Argus* 1964; John Nordby, personal communication, 1 December 2013; Sprouse 2005, 7).

Results of the Lake Minnetonka Nautical Archaeology 2 Project

Research Design

The purpose of the LMNA-2 Project was to determine the nature of specific anomalies and one wreck site. MHM prioritized which anomalies – potential nautical or underwater archaeological sites – and one wreck site located during the LMS-1 and 2 surveys that deserved priority attention for further research in Lake Minnetonka. MHM determined the list from an analysis of sites and anomalies that were deemed the most historically and archaeologically significant, that could answer the most questions, and those that may be in danger from looting. The investigated anomalies were 10, 17, 24.1, 25, 31, 32, 39, 41.2, 43, 46, 55, 57, 58, 59, 60, 60.1, 61, 63.1, 66, 67, 80, 81, 83 (West Arm Pontoon Boat Wreck), and 107. Using data accumulated from the fieldwork as a starting point, MHM conducted research to place newly recognized nautical and maritime archaeological sites and anomalies in their historical contexts and in one case, established an identification and precise disposition (sinking) date. Minnesota Archaeological Site Forms were filed with the OSA when appropriate and ultimately, all data collected during the LMNA-2 Project will be utilized to nominate Lake Minnetonka as a Historic Shipwreck District.

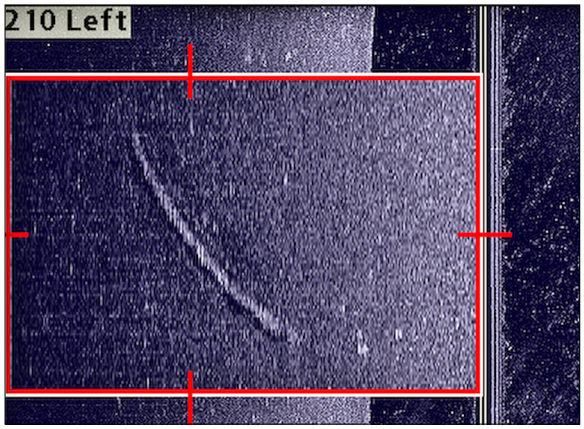
Methodology

The methodology used to identify and rudimentarily document underwater archaeological anomalies is straightforward but logistically complicated. MHM used the GPS coordinates of a wreck or anomaly, data produced during the LMS-1 and 2 projects, to drop a weighted diver down buoy near the target. Then the dive boat anchored a safe distance away from the buoy and divers geared up for the dive. At any given time, there were between two and three divers underwater. If the buoy anchor weight – four pounds of dive weights – landed near and sometimes on the anomaly or

wreck, no search for the target was conducted. However, for a variety of reasons, a brief search for the target was conducted until it was located or it was determined that the anomaly was a false sonar return. If a cultural resource was located, the divers photographed and recorded video of the site and then its basic measurements were recorded. The order that MHM investigated the prioritized list of anomalies was flexible to accommodate the availability of volunteer divers and designed to take advantage of low traffic days or less busy times of day on the lake.

After the completion of the LMNA-2 Project fieldwork in November 2013, there are now 17 wrecks with site numbers, another 11 wrecks not assigned site numbers, two maritime/underwater sites with numbers and three sites without numbers. During the LMNA-2 Project specifically – of the 24 anomalies investigated – MHM and the volunteers confirmed the existence of nine new wrecks in Lake Minnetonka, two new submerged maritime sites, five anomalies were determined to be large rocks or a collection of rocks, one anomaly was a collection of vegetation, rocks, cans, and bottles, one anomaly was part of a tree, and six anomalies were false sonar returns. Further, MHM gathered new information on the Chris-Craft Sportsman Wreck, Crystal Bay Houseboat Wreck, and the Aluma-Craft Model R Wreck that were investigated during the LMNA-1 Project that advanced our understanding of those sites and their maritime history.

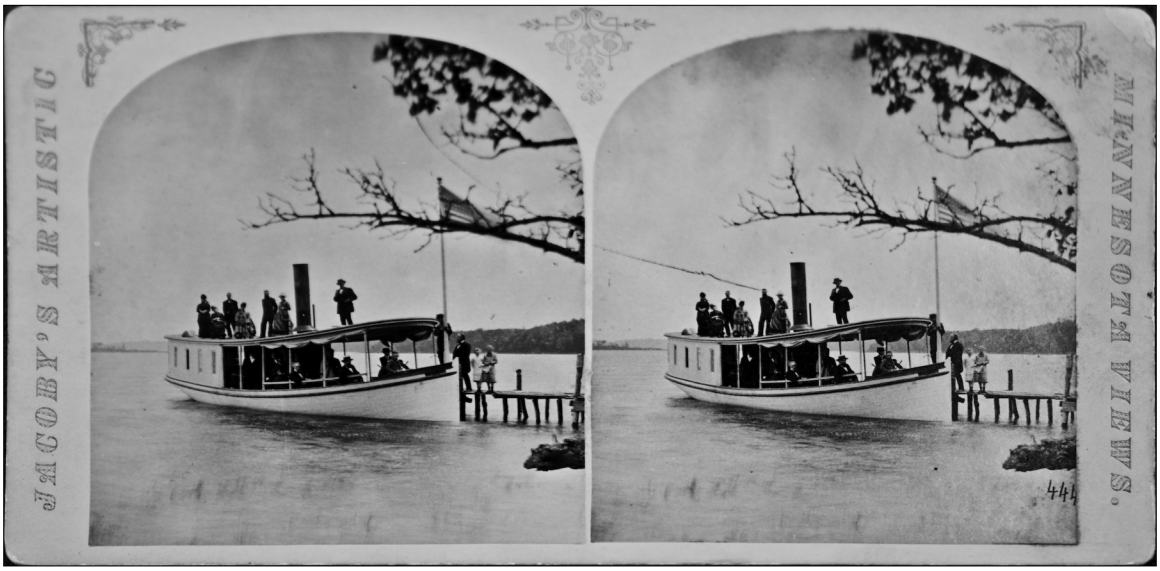
Saucy Kate Wreck, 21-HE-420 (Anomaly 60)



MHM re-scanned the *Saucy Kate* Wreck in October 2013 to augment the data collected during SCUBA reconnaissance.

MHM recorded a sonar image of Anomaly 60 in September 2011 during the LMS-1 Project and has determined that Anomaly 60 is *Saucy Kate*. Propeller steamer *Saucy Kate* was constructed from the remains of 45-foot *Kate/Katie May*, a steamboat owned by Captain Charles May. *Katie May* sank in Robinsons Bay when her boiler exploded on June 23, 1877, killing three of the five men on board. The *Katie May* was raised later that summer. Apparently her builder Maurice Godfrey incorporated the engine and sections of Kate/Katie May's bow and stern into the new *Saucy Kate* and she was launched in mid-June 1878 (Edgar 1984 13-14). The steamer was 58 feet long with a 12-foot beam, a five-foot depth of hold, and she carried 100 passengers. Her North Star Works vertical boiler carried a maximum of 185 pounds of pressure. *Saucy Kate* and her partner, the larger sternwheeler *Hattie May*, operated an advertised packet service to transport passengers to and from the St. Paul and Pacific Railroad stop in Wayzata. The steamers stopped at Harrow House on Upper Lake's Shady Isle and the Lower Lake's Minnetonka Park (Tonka Bay) and Excelsior, as well as spots in between when necessary, before retuning to Wayzata for the afternoon train to the Twin Cities. During

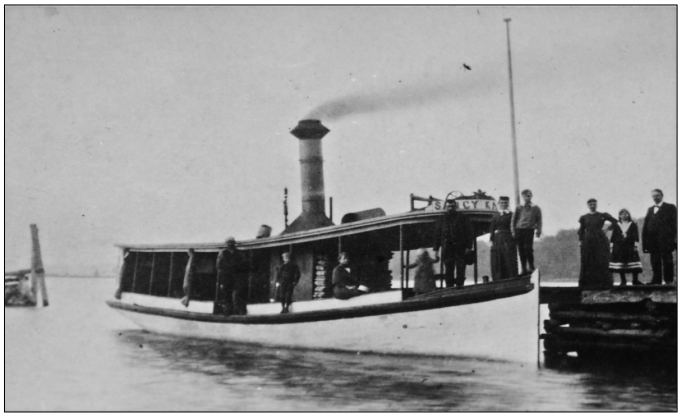
the evenings the steamers delivered diners to Upper Lake hotels as well. During her second month of packet and excursion service, *Saucy Kate* lost a passenger – Commodore May's 11-year old son Alex – a stowaway from Excelsior to Wayzata. On the return trip to Excelsior, and with Commodore May unaware that Alex had already made the trip across the lake, Alex fell off the steamer's stern near Spirit Knob at the entrance to Wayzata Bay. He took *Saucy Kate's* stern safety gate with him and used it as a life raft until he was rescued by a rowboat after sundown, scared and with a great chill (*St. Paul Daily Globe* 1878, 1879; *Tourist and Sportsman* 1877, 1879).



A Jacoby Studio stereoview of *Saucy Kate* dated to 1878-1879 (HE5.13r64, Minnesota Historical Society, digitized by MHM).

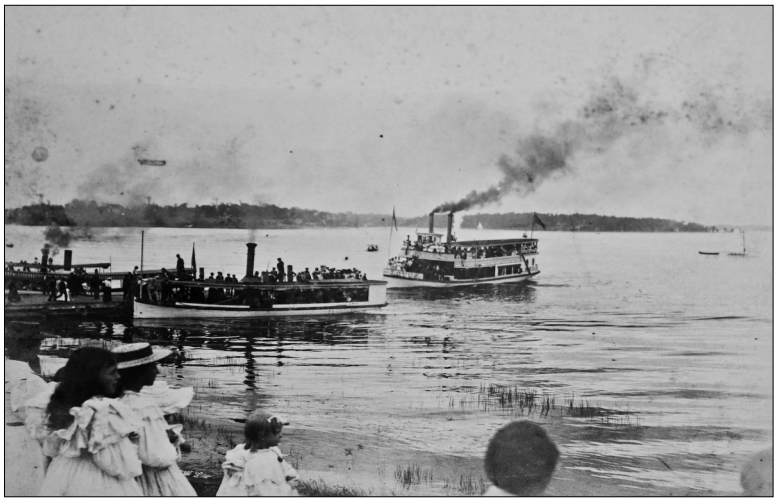
Commodore May sold *Saucy Kate* to F. H. Shepard in 1880 and in spring 1881, L. F. Sampson purchased the steamer to continue packet service from Wayzata to the Upper Lake and "all intermediate points". Sampson's ads boasted "the boiler of the *Saucy Kate* has been inspected and pronounced safe by the State Board of Inspection, and every measure will be taken for the comfort and safety of passengers. The boat has been handsomely fitted up, and is now neater and pleasanter than ever before...[and] will charter for excursions". The Lake Minnetonka Navigation Company (LMNCo) purchased *Saucy Kate* from Sampson in July 1881, although it seems this consortium did not officially incorporate until mid-June 1883 with partners Peyton S. Davidson, William Secombe, and Charles A. Zimmerman. This group's stated mission was "to construct, buy, equip and operate steamboats and other crafts on Lake Minnetonka...and to maintain restaurants on said boats and to build and run necessary wharfs, docks and piers for landing on the shores of said lake". Initially this corporation operated *Saucy Kate* and the steamers *Belle of Minnetonka*, *City of Minneapolis* (commonly referred to as *Minneapolis*), *Hattie May*, and *Lotus* in an advertised packet service on Upper and Lower Lake Minnetonka. The LMNCo operated the steamer until 1896. During this 15-year period, *Saucy Kate's* packet service had her based most often in the Upper Lake at the Chapman House on Cooks Bay or at Spring Park. She, along with the smaller steamers of the fleet, conducted the company's "local business". Beyond these regularly

scheduled transportation routes, *Saucy Kate* would offer moonlight excursions out of Spring Park on weekdays and later in the lake's boating seasons, she would take over more routes as the largest steamers of the fleet were taken out of service due to lack of passengers at summer's end. In early August 1886 an eerily similar accident occurred on board *Saucy Kate* as the one that involved Captain May's son in August 1878. A disabled child named Jimmy O'Brien, who was allowed to ride *Belle of Minnetonka* and sell newspapers and flowers to passengers, missed his ride on the large steamer from Chapman House. He caught the *Saucy Kate* instead, but was not on board as the steamer passed opposite Hardscrabble Point south of Cooks Bay. However, his crutch was on board at the stern and the rear gate was missing, exactly the scenario when the May child fell overboard eight years earlier. *Saucy Kate's* Captain Dix flagged down the *Lotus*, transferred his passengers, took on Commodore Zimmerman, and searched for Jimmy – only to find the gate and his hat floating in the water (Edgar 1984, 15; *St. Paul Daily Globe* 1883, 1884, 1885a-d, 1886a-b; *Tourist and Sportsman* 1881, 1883).



Saucy Kate in September 1889 (Album 111 #31, Minnesota Historical Society, digitized by MHM).

In the 1890 season, *Saucy Kate* was the first steamer to announce regular service beginning on May 25, meeting the Great Northern Railway train at Minnetonka Beach on Lafayette Bay and again meeting the train in Spring Park on the Upper Lake later in the day, providing passengers with a lake excursion or point-to-point transportation, whichever was desired. For the next few years, *Saucy Kate* reliably carried passengers on scheduled routes and on special occasions from the Upper to Lower Lake, such as on the evening of the "the naval battle at Hotel St. Louis" in Deephaven in late July 1891 – otherwise known as a large fireworks display that utilized 1,200 Roman candles – and other excursions. *Saucy Kate* acted as the official boat for judges, referees, timekeepers, and the Press during international and intercollegiate regattas that hosted crew teams from Winnipeg, the Minneapolis Rowing Club (the



Saucy Kate moored at a dock with the steamer *Lotus* approaching around 1895. Photograph by C.A. Zimmerman (HE5.13p73, Minnesota Historical Society, digitized by MHM).

'Lurliners'), Lake Minnetonka and the University of Minnesota ('the Minnesotas'), Cornell, and the Universities of Wisconsin and Pennsylvania between 1892-1895. Before a second regatta took place in August 1895, *Saucy Kate* had an accident that left her unable to act as the judge's vessel for that competition, and the *City of St. Louis* took her place. *Saucy Kate* was back as the judge's watercraft for three 1896 regattas (*St. Paul Daily Globe* 1890, 1891a-b, 1892a-b, 1893, 1894, 1895a-c, 1896a-e).

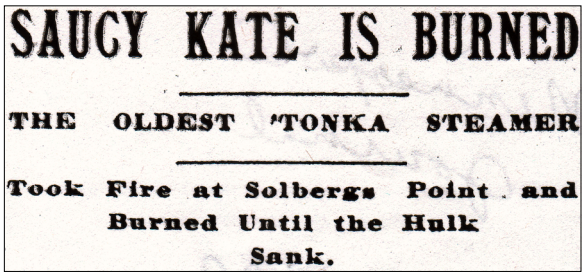
By mid-September 1896, the LMNCo was experiencing financial trouble and internal discord. At this time the corporation still owned the original five watercraft of the 1881 flotilla as well as the *City of St. Louis*. The published values of the LMNCo boats were *Saucy Kate* ($1,000), *City of Minneapolis* ($150), *Hattie May* ($500), *Lotus* ($1,500), *Belle of Minnetonka* ($3,000), and *City of St. Louis* ($7,000), and the company's docks were worth $1,200. On April 3, 1897 J. Toomey purchased *Saucy Kate*, *Belle of Minnetonka*, *City of St. Louis*, *Lotus*, and the LMNCo's docks at Excelsior and Solberg's Point for $3,500. Toomey sold the steamers and docks to the Great Northern Railway for $10,000 on May 1, 1897. On July 24, 1897, Captain John R. Johnson contracted to purchase *Saucy Kate* and the docks at both Solberg's Point and Excelsior from the Great Northern for $1,000,[1] although he was operating the steamer earlier in the season. The next day *Saucy Kate* was slightly damaged when the steamer *Acte* caught fire at their shared dock, but despite this she once again served the judges, timers, and Press during the Minnesota-Winnipeg regatta in early August 1897 (*Excelsior Cottager* 1897; Lake Minnetonka Navigation Company 1897; *St. Paul Daily Globe* 1896f-g; *St. Paul Globe* 1897a-c).

Saucy Kate and sternwheeler *Tonka* iced-in during winter 'storage' in St. Albans Bay around 1898. The print was made from a cracked glass plate (BR1110, Hennepin County Library).

In February 1898 it was reported that a new steamer was under construction for Captain John R. Johnson on St. Albans Bay that would be called *Saucy Kate*, replacing her

[1]Captain Johnson was also contracted to dismantle the *Belle of Minnetonka* and *Lotus*, to remove "machinery, iron work, hog chains and everything of value...same to be delivered f. o. b. cars, Capt. Johnson to dispose of the wood from the wreckage". It was noted that the boilers and machinery from the steamers were sent to St. Paul. In October 1898 Captain Johnson was hired to dismantle the *City of St. Louis* in a similar way (Lake Minnetonka Navigation Company 1897-1900).

namesake. Where this rumor originated is unknown, but *Saucy Kate* was not replaced by a namesake. Instead, the newly-constructed *Mayflower* joined *Saucy Kate* and *Hattie May/Tonka* in Captain Johnson's fleet. In her 21st year of service, in early July 1899, *Saucy Kate* hit the steamer *Hebe* amidships, causing a hole large enough to sink her. Two months later, on September 8, 1899, *Saucy Kate* caught fire at Solberg's Point while secured to a barge fashioned from part of the hull of the *City of St. Louis*. The barge sustained substantial damage but was saved, while *Saucy Kate* could only be towed away from the shore and let to burn. She sank nearby, with only her "smoke stack, the upper part of her engine and boiler and her charred gunwales" visible above the lake surface. The wreck was raised and moved to deeper water since she was a hazard to navigation, but her new location had been reported inaccurately by Edgar who claimed "the charred hull was towed to deep water off Gale Island and sunk". *Saucy Kate* was the oldest steamer on Lake Minnetonka at the time of her sinking and had been characterized as "one of the most popular boats on the lake" (Edgar 1984, 15; McGinnis 2010, 135; *Minneapolis Journal* 1899; *Minneapolis Tribune* 1899; *St. Paul Globe* 1898, 1899a-b).



SAUCY KATE IS BURNED

THE OLDEST 'TONKA STEAMER

Took Fire at Solbergs Point and Burned Until the Hulk Sank.

Saucy Kate's burning was reported in Minneapolis and St. Paul newspapers, particularly since she was the oldest operating steamer on the lake at that time (Minneapolis Journal 1899).

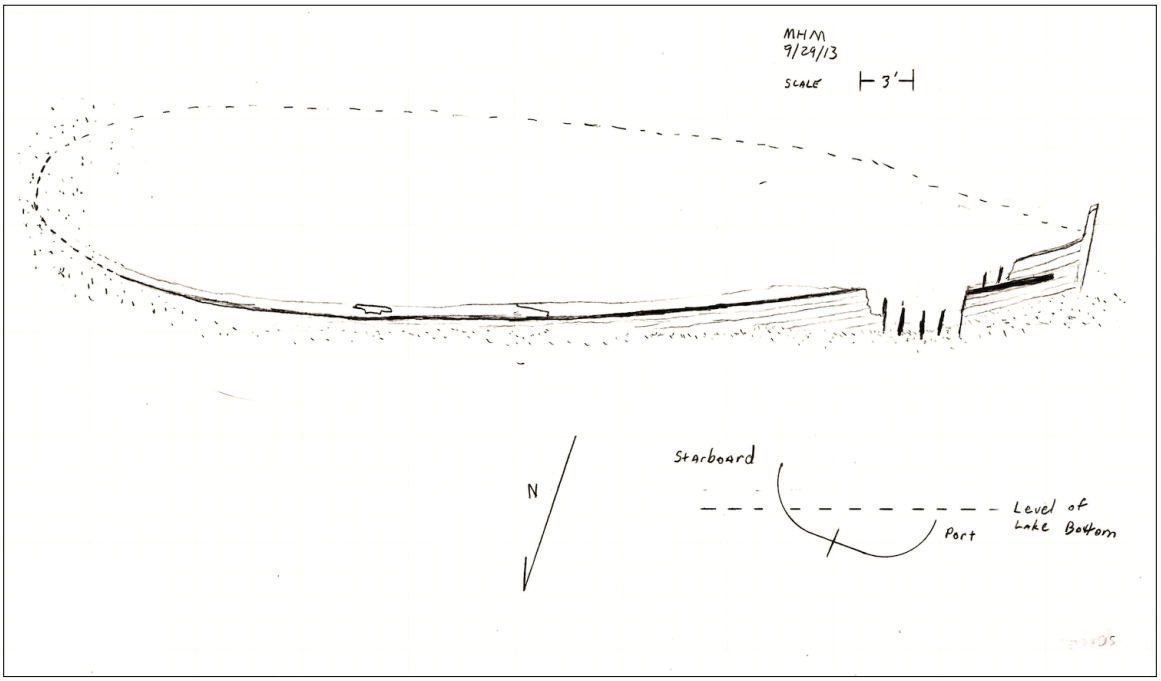
MHM reviewed sonar data from the LMS-1 Project for an anomaly that could be *Saucy Kate* near Gale Island as reported by Edgar. While there are numerous anomalies in the area, and the wreck of the sidewheeler *Minneapolis* (21-HE-403) is to the southwest of Gale Island east of Sunrise Point, no anomalies the size of *Saucy Kate* exist in proximity to Gale Island. Further, MHM has been told repeatedly over the years by Lake Minnetonka residents that a large wreck was located somewhere near the mouth of Excelsior Bay or off Excelsior Commons – referred to by sport divers in the last decades as 'Jerry's Wreck'. Anomaly 60 is actually at the mouth of Gideon Bay and appeared to be a partially buried cultural resource approximately 50 or more feet long in about 45-50 feet of water – in a gulley. MHM archaeologists and volunteers confirmed the anomaly is a wreck in late September 2013. Little sunlight reaches the wreck but with strong underwater lights, some of the wreck can be seen. The

MHM's Christopher Olson (with the light strapped to his face mask) and volunteer Mark Slick on the *Saucy Kate* Wreck (by Kelly Nehowig).

wreck is mostly buried on her port side and at the stern, has substantially burned gunwales forward with more damage on the port side, and has an intact – although charred – stempost. The stern is rounded (MHM's Olson reached into the silt and felt the stern's shape) and a large aft rubrail overhang has survived. The wreck has at least one wooden cleat and a sizeable scarf in her gunwale's construction, two attributes also seen in the Wayzata Bay Wreck (21-HE-401) that sank in 1879, just one year after *Saucy Kate's* construction. MHM submitted an archaeological site form to the OSA in early November 2013 and acquired *Saucy Kate's* site number at that time.

The top of *Saucy Kate's* stempost shows evidence of burning (by Kelly Nehowig).

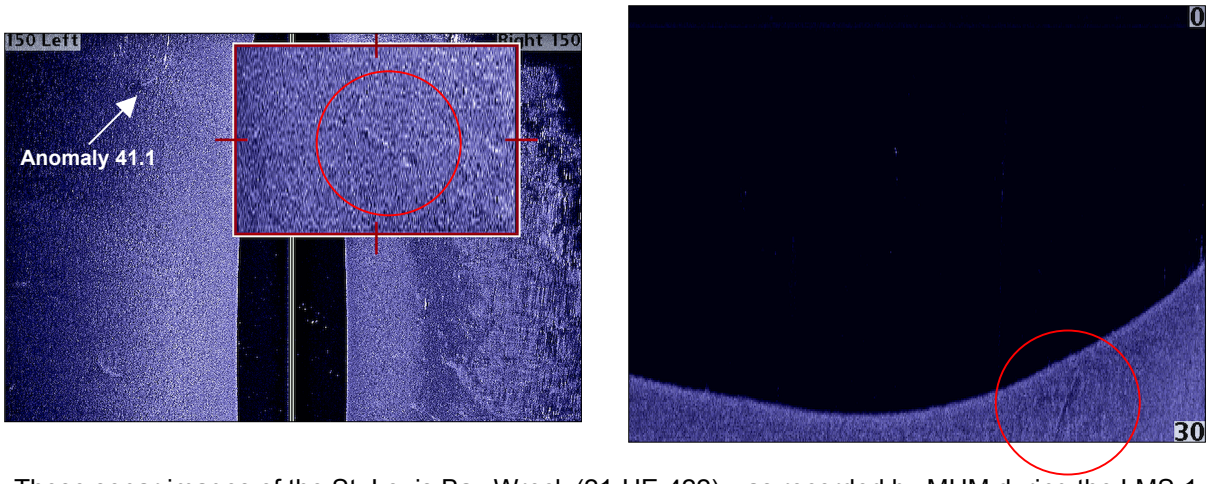
A burned timber on *Saucy Kate* (by Mark Slick).



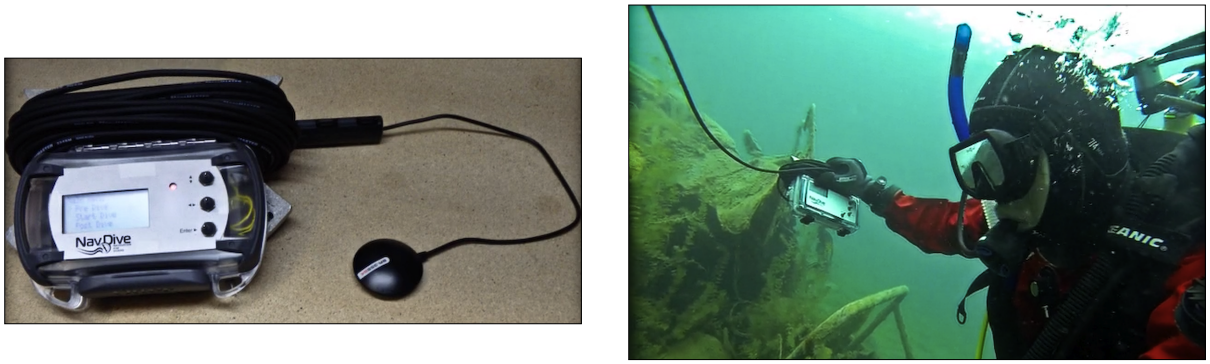
MHM's sketch of the *Saucy Kate* Wreck site (21-HE-420). MHM's Olson probed into the deep silt at the stern and determined the shape of the stern. This brief sketch will be replaced by a full site plan in the future.

St. Louis Bay Wreck, 21-HE-422 (Anomaly 41.2)

MHM recorded a sonar image of Anomaly 41.2 in September 2011 during the LMS-1 Project. MHM volunteer Kelly Nehowig located the wreck during a dive in St. Louis Bay in mid-November 2013. Like the Wayzata Bay Rowboat Wreck (21-HE-417), also found by Kelly, MHM did not recognize the acoustical signature of the St. Louis Bay Wreck during the sonar survey or during sonar review because of the fragmentary and buried nature of the wreck. In simple terms, she does not look like a submerged cultural resource in the sonar footage. Kelly used an underwater navigation system he designed and developed through his company Applied Logic Engineering, Inc., to record the wreck's precise coordinates. The diver controls NavDive underwater, connected to a GPS unit at the lake surface that is attached to 'diver down' inner tube. The unit travels with the diver and the GPS coordinates are relayed in real time to the diver through a cable. The coordinates provided by Kelly through NavDive allowed MHM to pin-point the wreck in the sonar footage. In short, if Kelly had not found Anomaly 41.2 she would have evaded detection by MHM.

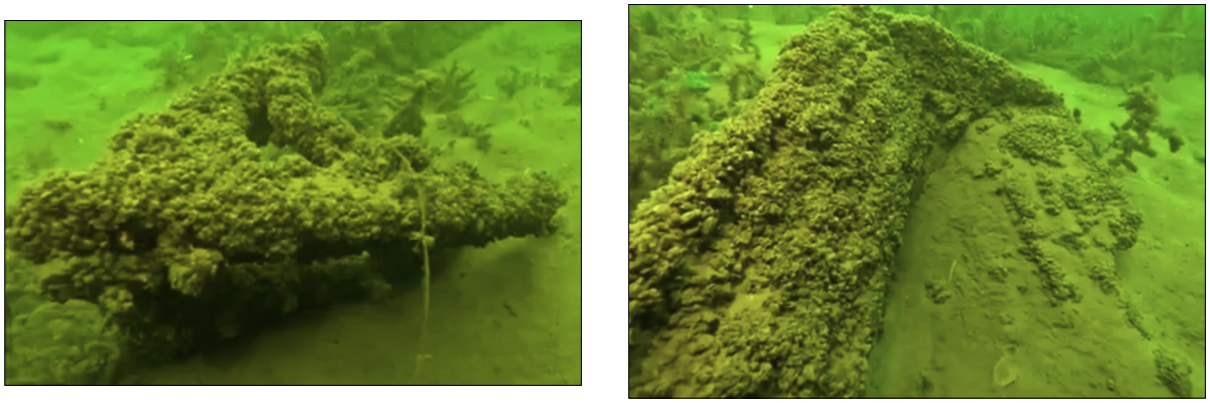


These sonar images of the St. Louis Bay Wreck (21-HE-422) was recorded by MHM during the LMS-1 Project in September 2011. Even though the survey boat did not pass directly over the wreck, the down image sonar beam did record the wreck's acoustical signature. Note Anomaly 41.1 on the side-image graphic.



Applied Logic Engineering's NavDive system and its use underwater by Kelly Nehowig (courtesy of Applied Logic Engineering, Inc. and Kelly Nehowig).

The St. Louis Bay Wreck is 22 feet long, 6 feet wide, is a large clinker-built (constructed with over-lapping hull planks, often called lapstraked) rowboat, and lies in about 23 feet of water. The condition of the St. Louis Bay Wreck is similar to that of other rowboat wrecks in Lake Minnetonka – the Wayzata Bay Rowboat Wreck and the Gideon Bay Wreck. All three are similarly degraded, an indication of their light construction (their planks, frames, etc., are made of thinner wood than that of a larger boat or a boat that would carry heavy cargo) and possibly due to the fact that they were built of softer wood in comparison to other vessels; rowboats were often cheap and not expected to last long. The St. Louis Bay Wreck's starboard side is less degraded that the port side and the ridges of the clinker-constructed hull can be seen in the 'waviness' of the zebra mussels attached to it. The wreck has a small foredeck, a diagnostic attribute, and her stern is a distinctive wineglass transom design. The wineglass transom and the wreck's length have led MHM to hypothesize that she may have been part of the Hotel St. Louis rowboat fleet. The St. Louis Bay Wreck does not appear in the Wayzata-based Moore Boat Company or Ramaley Boat Company catalogs for 1908-1912, suggesting she was constructed earlier. Further, photographic evidence is abundant showing boats of the same size as the wreck plying Lake Minnetonka from the late 1870s, usually associated with boarding houses and hotels that kept fleets of rowboats for the enjoyment of their patrons. MHM will be reviewing the Lake Minnetonka sonar footage in order to discern other wrecks that might have evaded detection during the initial sonar analysis. MHM submitted an archaeological site form to the OSA in early November 2013 and acquired the St. Louis Bay Wreck's site number at that time.

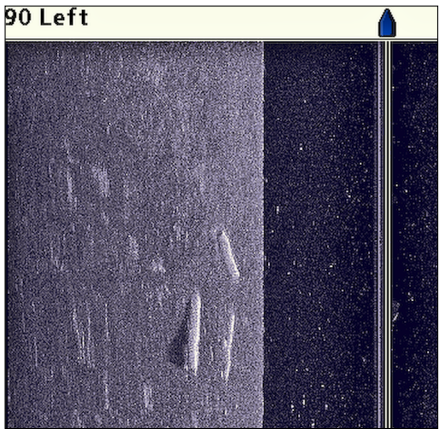


The bow (left) and looking toward the stern (right) shows the zebra mussels attached to the St. Louis Bay Wreck. The lapstrake hull and wine glass stern are discernible (by Kelly Nehowig).

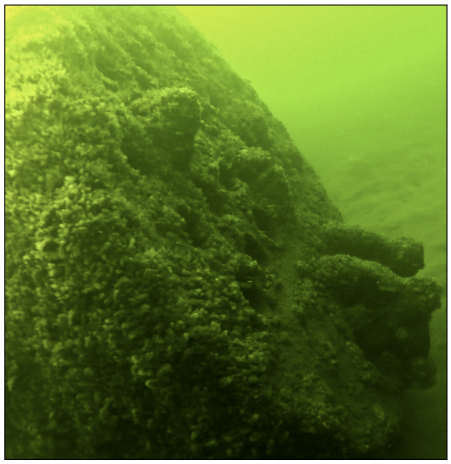
The Upper Lake's Chapman House's wine glass stern rowboat fleet around 1885 (MH5.9MDr10, Minnesota Historical Society, digitized by MHM).

Marine Launch Boilers Site, 21-HE-421 (Anomaly 67)

MHM recorded Anomaly 67's acoustical signature in September 2011 during the LMS-1 Project and it was also recognized in some older sonar footage MHM recorded in 2010 during equipment checks on Lake Minnetonka. Anomaly 67 appeared to be a partially buried cultural resource in 25-30 feet of water. In September 2013 MHM archaeologists and volunteers determined the anomaly was comprised of three riveted horizontal steel boilers numbered 1-3. Boiler 3 is 3 feet in diameter and 12 feet long. It is a fire tube (tubes that the hot gases of combustion pass through) boiler sitting on the lake bottom upside down whose smoke box – a metal structure at the end to collect combustion gases out of the boiler and into the smokestack – is missing. It has a minimum of 23 tubes running longitudinally through the boiler's body (the exact number cannot be determined due to zebra mussels that maybe filling some of the holes). Its manhole cover (a lid at the end of the boiler above where the missing smoke box would be) is intact and has two bridge clamps holding it in place. An attribute that defines Boiler 3 as a fire tube boiler is presence of the manhole cover. The manhole is situated so that the steam pressure is held within the barrel of the boiler (not in the fire tubes themselves) and provides access to the inside of the boiler for cleaning and inspection. Boiler 3 is a single pass fire tube boiler since the gases of combustion pass only once through the fire tubes that run horizontally through the length of the boiler. A single pass boiler design is less complicated and easier to maintain than a multi-pass boiler and would be used in a confined space because they are less bulky and smaller. MHM must note that Boiler 3 is not a Scotch marine boiler. The hallmarks of a Scotch type are its stubbiness and larger diameter, by-products of the desire to increase the heating area for more efficient heat transfer. The fire tubes of a Scotch marine boiler are double pass or greater to achieve this goal. Boiler 3 also has 7 evenly spaced holes evident on its bottom side that are probably drainage holes for boiler scale and sediment that settle out into a mud drum for later expulsion.

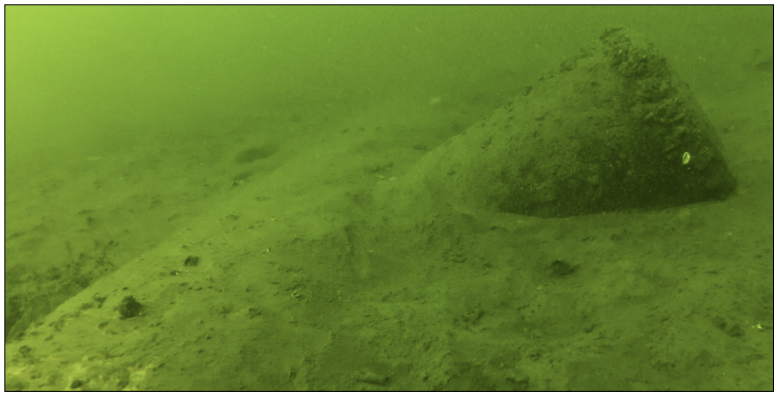


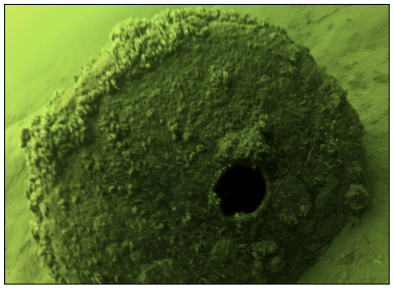
The sonar signature of the Marine Launch Boilers Site (21-HE-421).



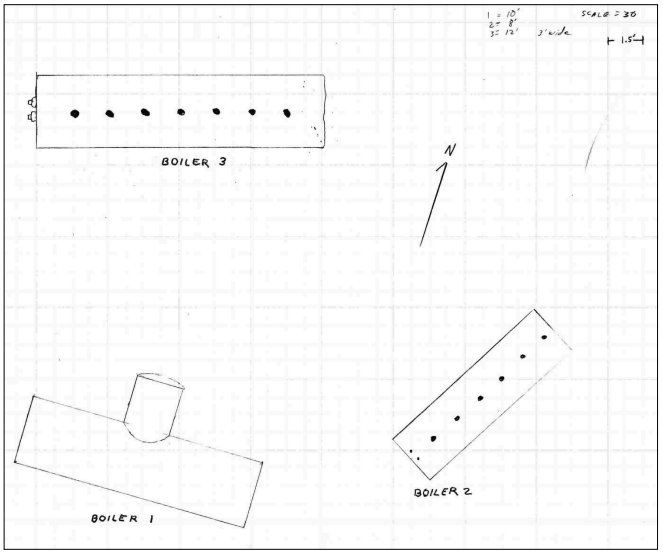
Boiler 3's manhole cover (above) and drain holes (below, by Kelly Nehowig).

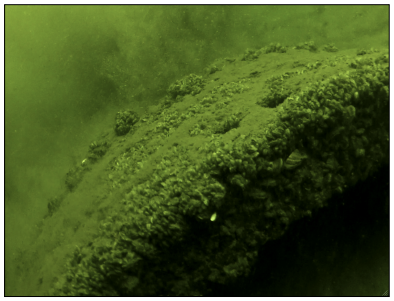
Boiler 1 is 3 feet in diameter and 10 feet long. MHM is confident that the shape of Boiler 1 is consistent with fire tube boiler design due to its steam dome (the collection point for steam on top of the boiler from where the steam is subsequently directed to the steam cylinders of the engine in order to provide power) – in a water tube boiler the apparatus that would do the job of a steam dome would be a steam drum. A steam drum is akin to a miniature horizontal boiler that is on top of a water tube boiler – Boiler 1 definitely has a steam dome. It seems that Boiler 1 has been gutted as is evidenced by its open end and apparent hollowness. MHM hypothesizes that the fire tubes, tube plate (the metal plate seen in Boiler 3 that the fire tubes poke through), and furnace (commonly known as a firebox where the fuel, either coal or wood in this instance, was burned) have been removed. Boiler 2 is 3 feet in diameter and 8 feet long. It is also upside down and has drainage holes evident like Boiler 3 although some may be obscured and it is gutted like Boiler 1. The only arguments MHM can make at this time for the boiler's type are its similarities to Boilers 1 and 3 and its context that suggests it is a fire tube boiler like the others. Boilers of this size in a marine context are referred to as 'launch boilers' – and Lake Minnetonka was rich with medium-sized steam launches. These three launch boilers represent the only known surviving Lake Minnetonka marine boilers that were utilized during the lake's 'heyday' of steam navigation (the water tube boiler on the 1906 steamboat *Minnehaha* is modern).





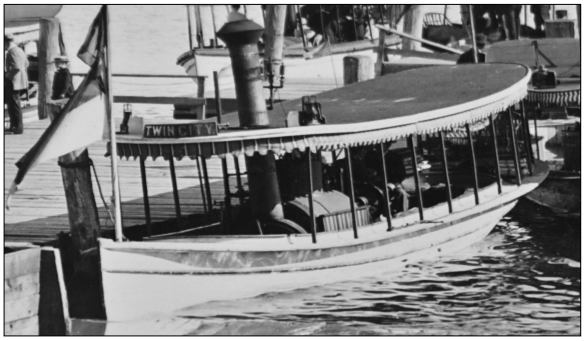
Boiler 1 is sittuated so its steam dome is visible (by Kelly Nehowig).





Above: Boiler 2 appears to be gutted like Boiler 1 (by Kelly Nehowig).

Left: MHM's sketch of the Marine Launch Boilers Site (21-HE-421).

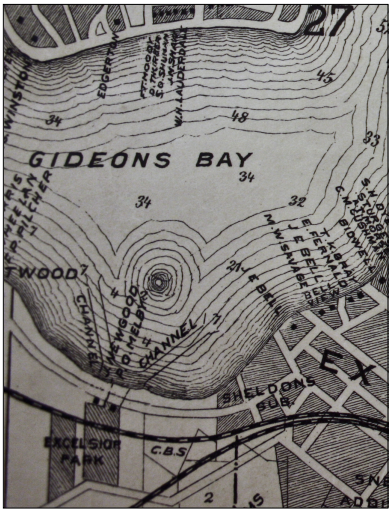


The medium-sized steam launch *Twin City* carried a horizontal fire tube boiler with a steam dome (HE5.11T.r9, Minnesota Historical Society, digitized by MHM).

The context of the Marine Launch Boiler Site – a large suburban lake that was plied by a variety of steamers under 300 feet long – indicates they likely powered three of the medium-sized steam launches in the 1880s-1910s. Space-saving vertical steam boilers would have been employed in the smaller launches, vessels with a narrow beam, or purchased by boat owners who wanted to maximize the carrying capacity of their boat. The majority of steamers on Lake Minnetonka used fire tube boilers, although there are six notable exceptions to this generally held-rule – the Lake Minnetonka Streetcar Boats *Como*, *Harriet*, *Hopkins*, *Minnehaha*, *Stillwater*, and *White Bear* carried the Roberts Safety Water Tube Boiler developed in 1902 in Chicago (Hield 1910, 2). MHM has located images of several Lake Minnetonka steamers that carried horizontal fire tube steam boilers and vertical boilers. At this time MHM cannot determine what type of boiler every historic steamer on the lake used (although many are known, including the boiler size), but from research we know that horizontal fire tube boilers of the size that comprise the Marine Launch Boiler Site were **not** carried on these dismantled or sunk Lake Minnetonka vessels: the Streetcar Boats, *Saucy Kate, Belle of Minnetonka*, *City of St. Louis,* ferry boats *Minneapolis, St. Paul,* and *Minnetonka, Puritan, Plymouth, Mayflower, George/Excelsior, Lotus,* tugs *Hercules* and *Priscilla, Tonka, Acte, New Acte*, and the dozens of gasoline-powered launches that began appearing on the lake beginning in the late 1890s and for more than a quarter of the 20th Century. A few examples of mid-sized steam launches on Lake Minnetonka that carried horizontal steam boilers that are similar to those that comprise the Marine Launch Boilers Site are the *Fresco/Why Not?* built in 1877, *Hawkeye/Reindeer/Archie* launched in 1880, *J.Y.C./Hebe* launched in 1884, *Minnesota/Twin City/Rambler* launched in 1884, and *Alert* launched in 1886 (McGinnis 2010, 4, 84, 104, 123, 180).

MHM's theory concerning the formation of the Marine Launch Boilers Site has been determined by the lack of a smoke box on Boiler 3 and the probable lack of fire tubes in Boilers 1 and 2. Depending on wear and tear, marine boilers would often be replaced by newer models or a steamer would be converted to internal combustion. Often the machinery (boilers and engines) would be recycled out of a vessel that was being dismantled. There is evidence of these activities in historical records pertaining to Lake Minnetonka, including those of the Twin City Rapid Transit Company (TCRT) during the dismantling of the steamers *Minneapolis, St. Paul, Minnetonka, Puritan, Plymouth,* and *Mayflower* (Twin City Rapid Transit Company 1916). The state of the boilers suggests to MHM that these were taken out of vessels for recycling, possibly for re-selling for use as power plants on other steamers or in a building, or to be sold for their scrap value as a load of heavy steel. The site's location in Gideon Bay suggests the boiler cargo was being transported on a barge when they were accidentally dumped overboard, possibly in high wind and waves. The destination for the boilers might have been the Excelsior Park Minneapolis and St. Louis Railway Station on Gideon Bay (just to the southwest of

current location of the Shorewood Yacht Club) where the boilers could have been loaded onto a railcar to their next destination. This is MHM's preferred theory since it was not cheap or easy to remove boilers from steamboats in terms of labor costs, the equipment required, and the use of a tug and barge to transport them.



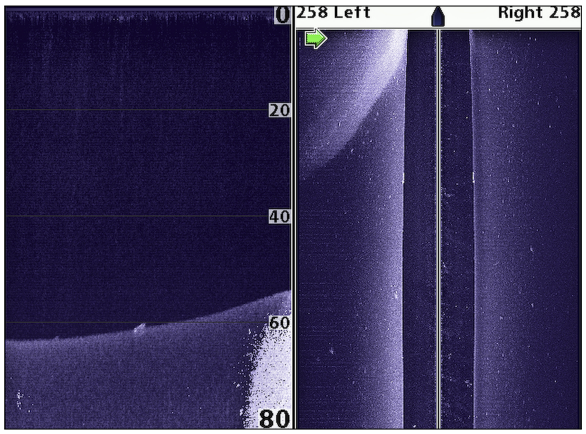
Gideon Bay in 1896 indicating the location of the train depot in Excelsior Park (Cooley 1896).

As further examples of recycling beyond the sale of the used engines and boilers mentioned above, the TCRT ledgers record the sale of thousands of items from the defunct Big Island Amusement Park. Such things as benches, amusement ride parts, wiring, and tables – anything a person was willing to purchase – were inventoried and sold. Many of the Big Island Park commodities were held for 6 years and longer, sold in 1917 even though the park closed down in 1911, indicating a willingness to hold onto inventory in order to recoup expenses (Twin City Rapid Transit Company 1916-1917). Valuable items such as boilers would be worth holding on to if a steamer operator had a place to store them until they could be sold. Alternatively, the boilers could have been discarded by whoever removed them from their former vessels and the quickest, cheapest, and easiest option to dispose of them was to force them off a barge. MHM suggests a site formation date of 1911 that reflects the trend of Lake Minnetonka vessels being powered by gasoline engines 10-15 years earlier and the greatly reduced number of steamers on the lake by that date, including the steamers that once carried vertical fire tube boilers listed above. After 1911, the only steamboats still active on the lake were the Streetcar Boats of the TCRT, the tugs *Priscilla* and *Hercules*, and the vessels the TCRT purchased from Captain John R. Johnson: the *Puritan, Mayflower,* and *Plymouth*. MHM submitted an archaeological site form to the OSA in November 2013 and acquired the Marine Launch Boilers Site's number at that time.

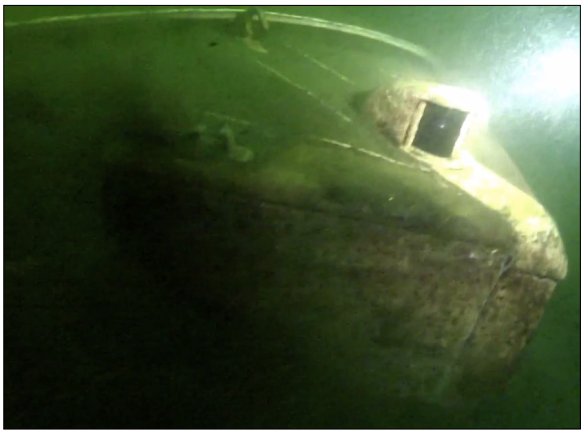
Update: Century Utility Wreck, 21-HE-423 (Anomaly 52)

MHM reported on the 1948 Century Deluxe Utility Wreck (Anomaly 52) in the LMNA-1 Project Report. However, in that report, the wreck was mis-identified as a 1956 Chris Craft Sportsman. There were some discrepancies with this identification but there were enough similarities between the wreck and examples of the 1956 Sportsman that we settled for the time being on that conclusion. MHM contacted Frank Miklos, a second-generation Century boat restorer whose family has been in that business over 50 years, to inquire about the possible identification of another wreck (Anomaly 43) confirmed during the LMNA-2 Project, and he also took a look at Anomaly 52. Miklos identified Anomaly 52 as a 1948 Century Deluxe Utility – and he is correct (Frank Miklos, personal communication, 1 November 2013). Using this new identification and data collected in June 2013 during MHM's underwater investigation of the wreck, MHM has concluded the watercraft sank before the advent of mandatory boat registrations in Minnesota – July 1, 1959. There is no registration number on her bow and no evidence

that a number was ever applied to the hull. Two other wrecks constructed in the 1940s and 1950s – the Damaged Bow Wreck (Anomaly 43) and the Correct Craft Aqua Skier Deluxe Wreck (21-HE-424, Anomaly 61, see below) have registration numbers on their hulls that are attached to the hull with fasteners; they are not decals but probably made of metal. In the earliest years of watercraft registration some wooden boat owners might have favored metal numbers and letters over stickers for aesthetic reasons. MHM surmises that the Century Deluxe Utility Wreck would have an applied registration number or at least a partial number would survived if they were decals – this is not the case. Further, analysis of the amount of sediment build-up on the wreck in comparison to other Lake Minnetonka wrecks nearby with known sinking dates, combined with the lack of registration numbers suggests the boat sank prior to mid-1959.



These sonar images of the Century Deluxe Utility Wreck were recorded by MHM during the LMS-1 Project in November 2011. The graphics are actually two views of the same recording. The left side image is the sonar unit's down image with the anomaly clearly evident and her depth. The right side image indicates the survey boat traveled directly over the anomaly and 'cut it in half'.



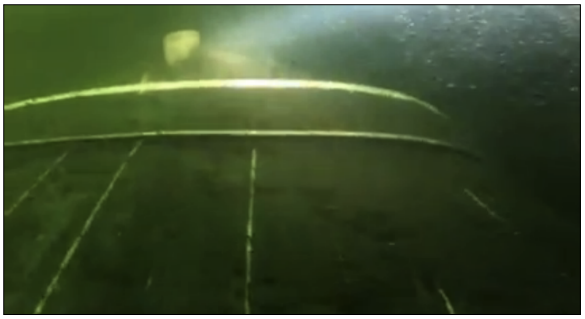
The bow of the Century Deluxe Utility Wreck has her chock, navigation lights, bow lifting eye, and her displaced windshield lies loose on top. There are no registration numbers on either side of her bow (by Ed Nelson).

MHM contends that the Century Deluxe Utility Wreck was not scuttled on purpose. If she was intentionally sunk, her owner would have stripped her of her metal and other fittings – chocks, step plates, bow and stern eyes, navigation light, steering wheel, windshield, dashboard faceplate, gas tank cover, gas tank, upholstered fore and aft seats, and most importantly, her engine (that would have been worth several hundred dollars, even in the late 1950s). The visible parts of her wooden hull are in exceptional condition but she is substantially buried in silt, so her bottom hull cannot be assessed for damage that may have occurred in a collision. Another reason for her sinking may be a leak in her hull that was ignored and it overcame her ability to float, especially if the boat was over-loaded at the time. An example of a simple sinking of a leaky boat on Lake Minnetonka occurred on the afternoon of May 30, 1969 when six people went down with their 19-foot runabout off Spirit Island southwest of Wayzata – all were saved by the HCSWP (*Mound-Westonka Minnetonka Sun* 1969a). MHM submitted an

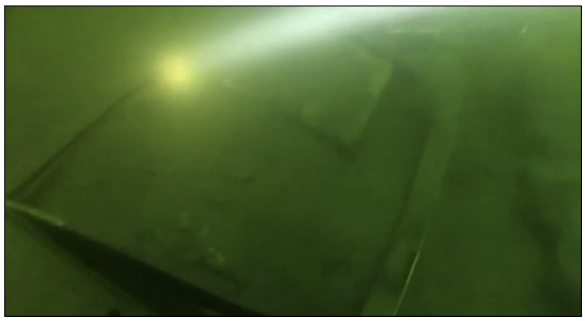
archaeological site form to the OSA in early December 2013 and acquired the Century Deluxe Utility Wreck's site number at that time.

The starboard side forward of the Century Deluxe Utility Wreck. The windscreen is no longer in place and is resting on the foredeck (by Ed Nelson).

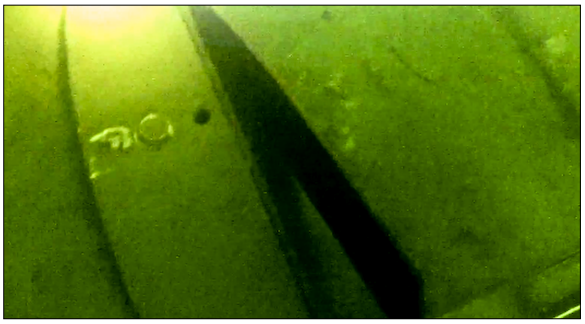
The wreck's steering wheel is in place and the dashboard face plat is a diagnostic attribute (by Ed Nelson).



The wreck's windshield is intact, just displaced (by Ed Nelson).



A view of the wreck's dislodged stern seat with her engine cover amidships (by Ed Nelson).



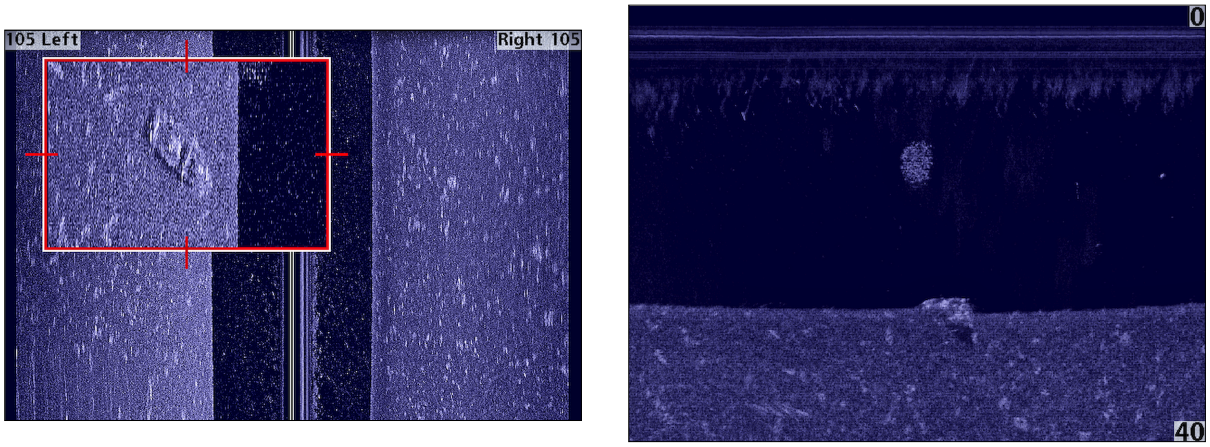
The stern of the Century Deluxe Utility Wreck with a lifting eye, gas tank cap, hole for the flagpole, and the dislodged seat back (by Ed Nelson).

This 1948 Century Deluxe Utility is identical to the Century Deluxe Utility Wreck with the exception of the bow spotlight. She was restored by Chuck Miklos & Sons (courtesy of Frank Miklos and the Century Boat Club, Inc. 2010).

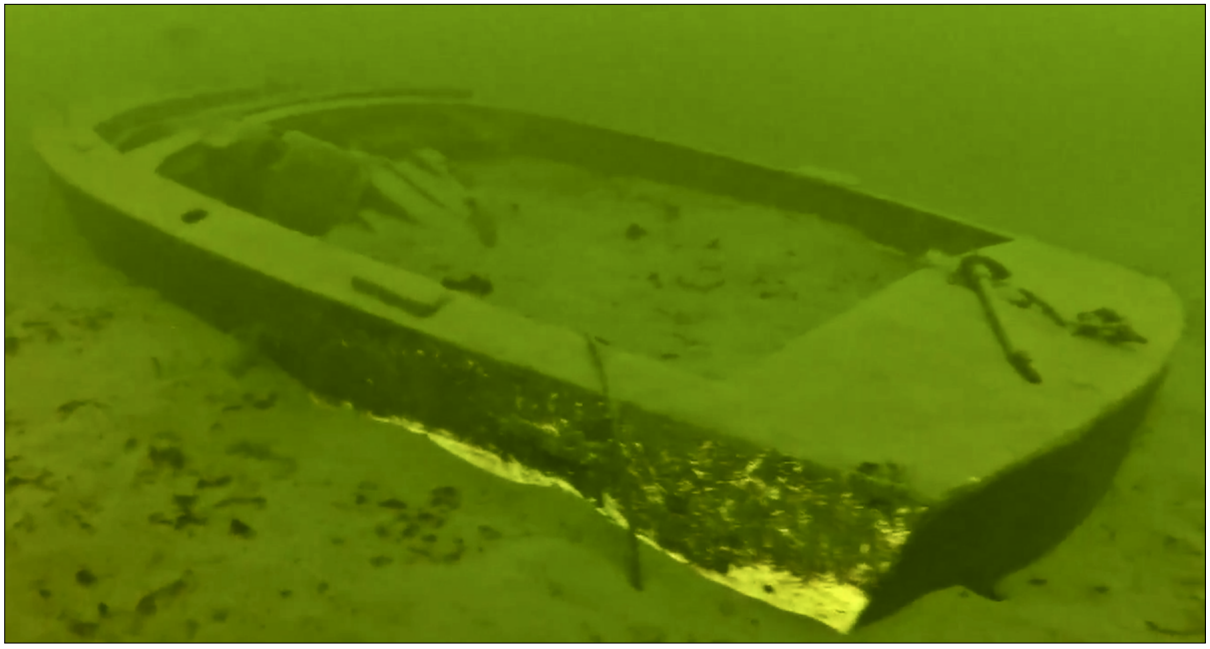
Correct Craft Aqua Skier Deluxe Wreck, 21-HE-424 (Anomaly 61)

MHM recorded an image of Anomaly 61 during the LMS-1 Project in September 2011. MHM dove on the anomaly in late September 2013 and determined it is a 1954 Correct Craft Aqua Skier Deluxe. Correct Craft is based in Florida, founded by W. C. Meloon as the Florida Variety Boat Company in 1925. In 1930 the company's name was changed to Pine Castle Boat and Construction Company and it was changed again to Correct Craft Inc. in 1936. It is now known as Nautique Boats (Ballantyne 2001, 141; Nautique Boat Company, Inc. 2013). In 1953 the Aqua Skier model was designed to serve the needs of the Cypress Gardens water skiing show located southeast of Orlando, Florida at the request of its owner, Dick Pope. The Aqua Skier was offered as a standard and deluxe model until 1958 and only the deluxe model was offered in 1959, the last year it was constructed (Correct Craft, Inc. 1954; Outdoors, Inc. 1963).

This 1954 Correct Craft Aqua Skier Deluxe is identical to 21-HE-424 except the wreck has an Iva-Lite spotlight atttached to the bow and two metal "Correct Craft" emblems on the stern (Correct Craft, Inc. 1954).



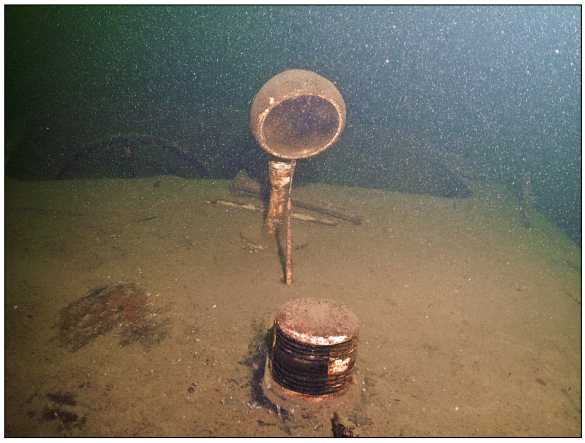
MHM re-scanned the wreck in October 2013 and produced these side and down-images. In the side image on the left, details such as the cockpit and the engine are defined.



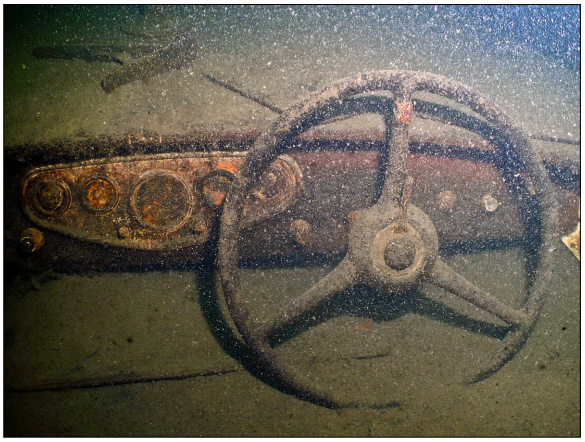
The Correct Craft Aqua Skier Deluxe Wreck (21-HE-424). The visiblity on Lake Minnetonka during the 2013 season was exceptional (by Kelly Nehowig).

The Correct Craft Aqua Skier Deluxe Wreck is 17.33 feet long and 70.2" in the beam and the wooden hull is painted white. She has a clearly visible registration number on her port and starboard bow: MN 9571 AN in bold red metal letters and numbers. She also has two cursive "Correct Craft" emblems on her port and starboard aft quarters that are loose and bulging outward, not completely attached to the hull. On her closed bow she has a bow eye, lifting eye, navigation light, radio antenna, and an Iva-Lite spotlight. The antenna and spotlight are not standard equipment and were added to the watercraft by her owner or a dealer. The remains of a windshield with its brackets also lie on the foredeck. One windshield panel lies in the cockpit on the silt; it appears to have fallen inside the wreck well after she sank. Four step plates that have the 'Correct Craft'

emblem on them are attached to the gunwales on port and starboard at the forward cockpit and about the middle of the aft cockpit. On both port and starboard aft there are two chocks and amidships there is a lifting eye with a line attached and an unattached mast light. Two holes in the gunwales amidships mark the location where missing air scoops would have provided ventilation for the wreck's bilge. The wreck has an intact dashboard with the appropriate gauges and an ignition switch set in a backing plate, a controller for the Iva-Lite, and an intact steering wheel with its throttle set to idle. The front cockpit seat is present while the aft seat may be missing or displaced. The engine cover is missing or at least open and the Gray Marine 110 HP engine is visible. There is a tarp or cloth lying partially on top of the engine and MHM would surmise it was a bimini top but the 1954 Aqua Skier was not designed to carry one.



The navigation light is intact and is factory equipment. However, the Iva-Lifte spotlight and antenna are not standard to this model and were either added by a dealer or the owner (by Mark Slick).



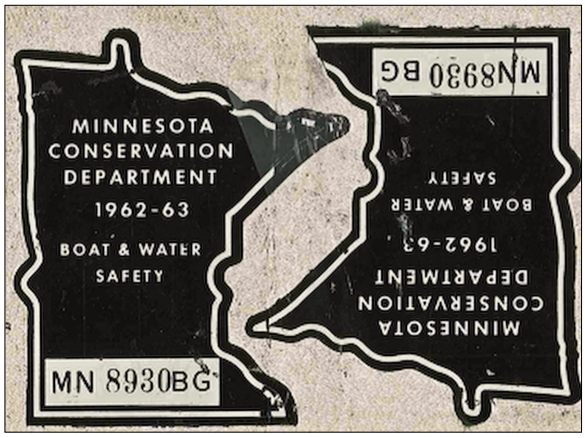
The dashboard faceplate is a diagnostic attribute of the 1954 Aqua Skier Deluxe (by Mark Slick).

The Correct Craft Aqua Skier Deluxe Wreck's license number is clearly visible on both sides of her bow: MN 9571 AN. She never had a year validation sticker attached to her white hull (by Mark Slick).

The wreck has two damaged metal 'Correct Craft' emblems on either side of her stern. These emblems were not adhered to the hull at the factory but added later by a dealer or her owner (by Mark Slick).

The amount of silt inside the hull indicates the watercraft was wrecked decades ago and MHM contends she sank prior to 1962 due to the lack of a year validation sticker alongside her registration number. There is no evidence the wreck ever had a validation sticker, an attribute whose usage – evidence suggests – began in 1962. The presence of these attributes - upholstered seats, a windshield, ventilators, step plates, and chocks – indicates the wreck is an Aqua Skier Deluxe model according to Correct Craft's promotional literature. Another characteristic of the Aqua Skier Deluxe is the presence of a ski pull, an upright metal bar with an eye at the top that would be inserted into the gunwale-level thwart behind the front cockpit seat. The wreck's ski pull is not in place but may be lying inside the hull. Standard design and construction for the 1954 Aqua Skier included a mahogany keel, a double mahogany bottom with canvas between the layers, plywood side planking, a double-planked transom, below water bronze and manganese fasteners, and above water brass and bronze fittings. MHM determined the wreck was constructed in 1954, the second year Correct Craft built the Aqua Skier, based on several attributes. Firstly, the 1953 model carried a 110 HP Nordberg engine exclusively, but customers were given a choice of a Gray Marine or Nordberg Bullet engine in the 1954 version. Additionally, the 1955-1957 Aqua Skiers were painted distinctly differently than the 1953-1954 models – and from each other – and at least one 1955 Aqua Skier in original condition (studied through photographs) was designed with a square backing plate for the dashboard gauges. MHM located one 1957 Aqua Skier in Minnesota, part of the Warner Collection Auction in 2010 – labeled as a "Correct Craft 18' Utility". Further, the 1958-1959 versions were drastically different in design with the

The wreck's cockpit is nearly filled with sediment (by Kelly Nehowig).

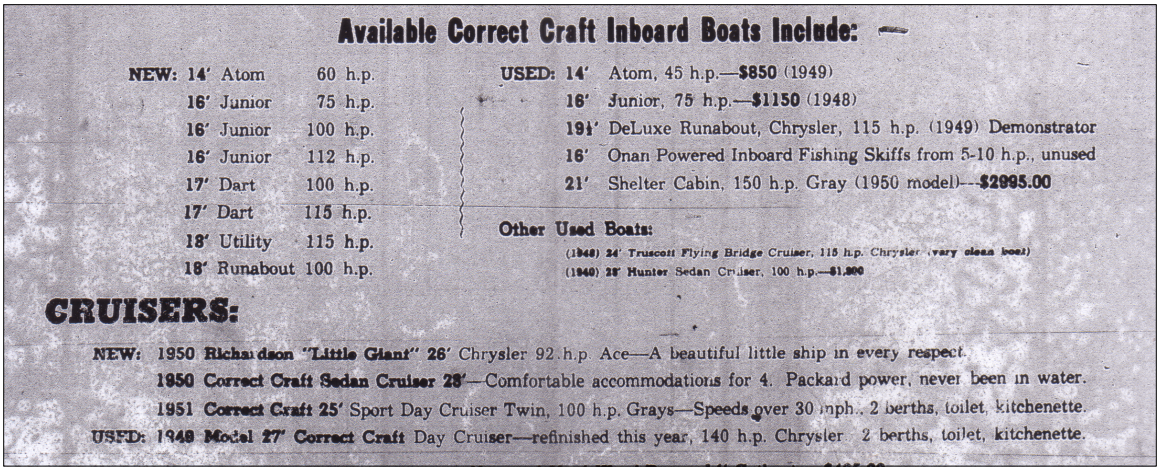


If the Aqua Skier Deluxe Wreck had sunk after 1961 she would have had a validation sticker on her hull like the one above (courtesy of John Nordby of the Department of Natural Resources).

The Aqua Skier Deluxe Wreck's 110 HP Gray Marine engine (by Kelly Nehowig).

addition of stern fins and in 1959, seemingly a lack of paint on the hull sides (Correct Craft Fan Web Site 2008; Correct Craft, Inc. 1954-1958; Mecum Auctions 2010, 54; Outdoors, Inc. 1963). MHM submitted an archaeological site form to the OSA in early December 2013 and acquired the Correct Craft Aqua Skier Deluxe Wreck's site number at that time.

The 1957 Aqua Skier sold in a Minnesota auction in 2010 (Mecum Auctions 2010, 54).



Available Correct Craft Inboard Boats Include:

NEW: 14' Atom 60 h.p.
16' Junior 75 h.p.
16' Junior 100 h.p.
16' Junior 112 h.p.
17' Dart 100 h.p.
17' Dart 115 h.p.
18' Utility 115 h.p.
16' Runabout 100 h.p.

USED: 14' Atom, 45 h.p.—**$850** (1949)
16' Junior, 75 h.p.—**$1150** (1948)
19½' DeLuxe Runabout, Chrysler, 115 h.p. (1949) Demonstrator
16' Onan Powered Inboard Fishing Skiffs from 5-10 h.p., unused
21' Shelter Cabin, 150 h.p. Gray (1950 model)—**$2995.00**

Other Used Boats:
(1948) 24' Truscott Flying Bridge Cruiser, 115 h.p. Chrysler (very clean boat)
(1940) 28' Hunter Sedan Cruiser, 100 h.p.—$1,200

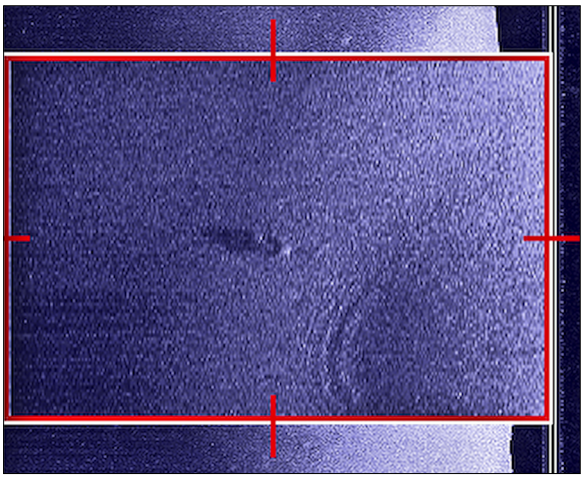
CRUISERS:

NEW: 1950 **Richardson "Little Giant" 26'** Chrysler 92 h.p. Ace—A beautiful little ship in every respect.
1950 Correct Craft Sedan Cruiser 28'—Comfortable accommodations for 4. Packard power, never been in water.
1951 **Correct Craft 25'** Sport Day Cruiser Twin, 100 h.p. Grays—Speeds over 30 mph., 2 berths, toilet, kitchenette.
USED: 1948 **Model 27' Correct Craft** Day Cruiser—refinished this year, 140 h.p. Chrysler 2 berths, toilet, kitchenette.

Cochranes Boat Yard on Solberg Point on Excelsior Bay offered a number of Correct Craft boats for sale in May 1951. The boat yard location is near the Correct Craft Aqua Skier Deluxe Wreck site (*Minnetonka Herald* 1951a).

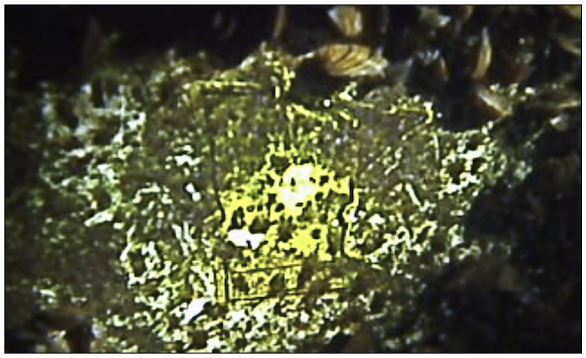
Outboard Speedboat Wreck (Anomaly 31)

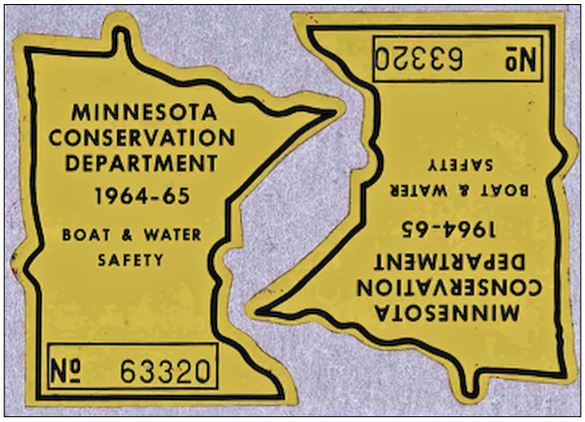
MHM recorded a sonar image of Anomaly 31 during the LMS-1 Project in November 2011 and dove on site in October 2013, confirming she is a wreck. She is 15.8 feet long with a 76.8 inch beam and carries a 1960 40 HP Johnson Super Sea Horse outboard motor. Her steering wheel is intact – but warped – and she has no surviving seats but there is a forward bench base for chairs. She has a foredeck with a small navigation light at the bow, the remains of a horn base on port, and carried a one-piece curved windshield that is missing. She has cleats port and starboard forward of amidships where the edge of the windshield



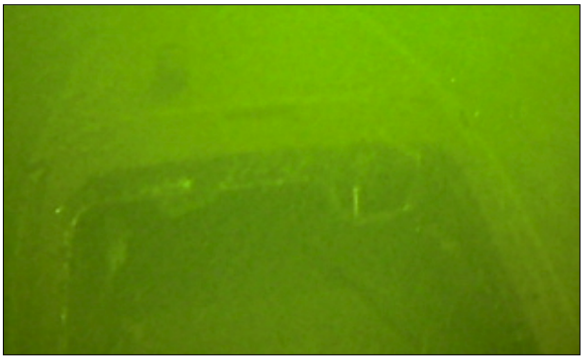
Anomaly 31's sonar image.

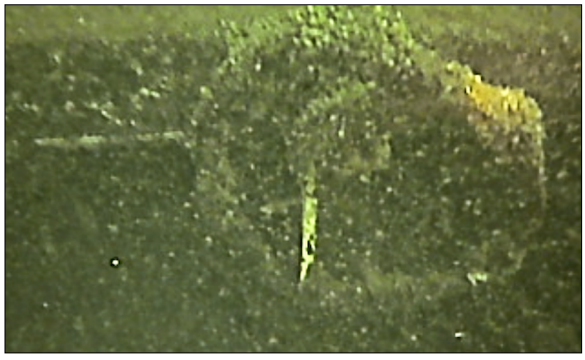
would meet the gunwales and there are remains of a mast light on starboard aft near the stern. Along the gunwale there appear to be attachment points for a bimini top. The gas tank is extant on her starboard aft quarter with a broken fuel line running from the motor onto the lake bottom. MHM initially concluded that the wreck is aluminum, but she may be fiberglass; a future dive will confirm her nature with the removal of zebra mussels from an area that will not damage the wreck. The Outboard Speedboat Wreck lies in an area with very little silt build-up, allowing the site to rest on top of a nearly hard silty-sand bottom. The wreck has a partial registration number on her port side, MN 59_5 BB, along with a yellow 1964-1965 year validation sticker on her starboard side. As mentioned above, the letter sequences within the BA-BH range were issued in 1962. Therefore, the Outboard Speedboat Wreck's first Minnesota license was obtained in 1962. MHM contacted the DNR and the available information for the partial registration number indicates she is either a 16 foot 1949 Larson boat that wrecked in 1972 or later – and she matches no Larson model of that vintage – or she wrecked prior to 1972. None of the numbers the DNR has on file match the size and possible model of Anomaly 31 except the 1949 Larson (*Deephaven Argus* 1964; John Nordby, personal communication, 8 October 2013). Therefore, Anomaly 31 sank prior to 1972 when the DNR files began. MHM contends the wreck sank in either 1964 or 1965 due to her validation sticker and that she might be a casualty of the 1965 'Deephaven Tornado'.



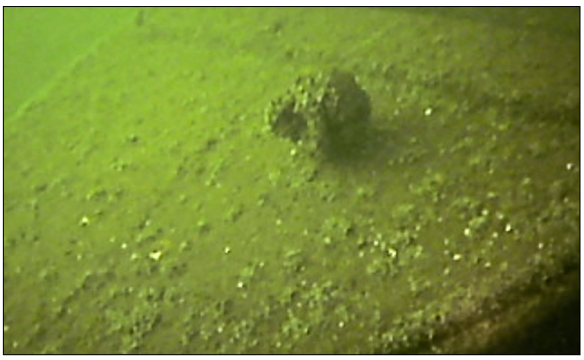


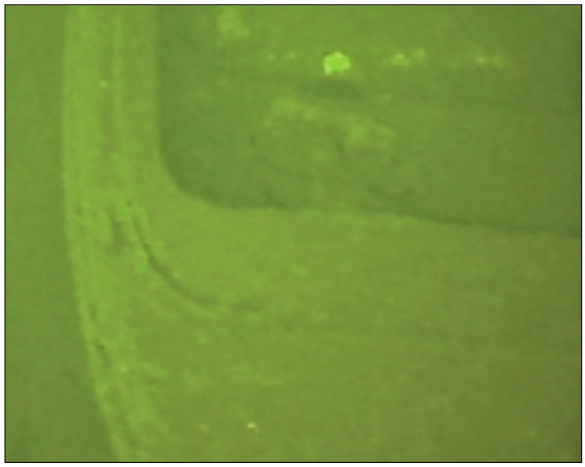
The Outboard Speedboat Wreck's last year validation sticker dates to 1964-1965. When new, it looked like the unused examples above (courtesy of John Nordby of the Department of Natural Resources).





The Outboard Speedboat Wreck is covered in zebra mussels, making a clear view of the dashboard difficult. The steering wheel is intact but warped.

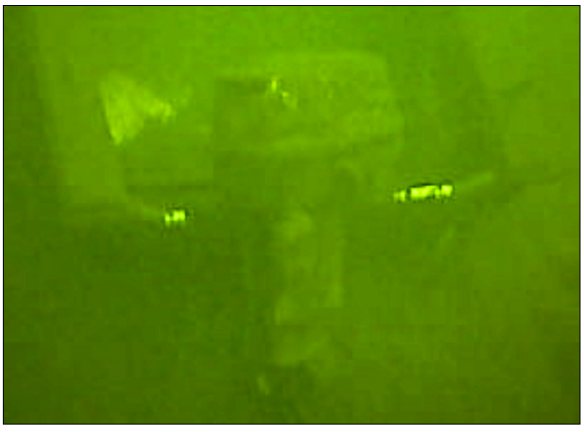


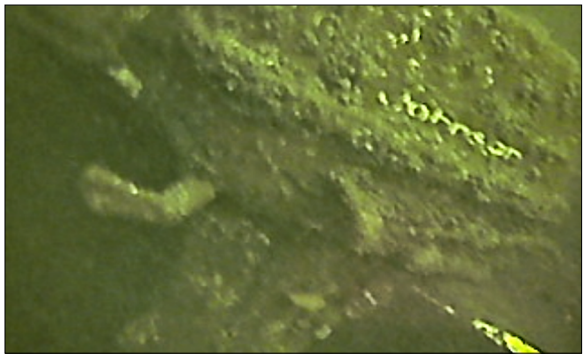


The base for a horn is present on the foredeck and cleats are extant on both forward gunwales.

The wreck has a bench-like base for seats at the front of the cockpit and a forward cleat is seen on the port gunwale.

The stern gunwales have cleats attached and there is a distinct design to the caprail.





The wreck has a Johnson 40 HP Super Sea Horse motor attached to the transom. When new the motor looked like the example below.

The outboard motor to the left is the same model as the one on the Outboard Speedboat Wreck and is identical to the example in the ad above except for the accent colors. The wreeck's motor has a silver 'Johnson' emblem and the ad outboard has red letters (Desert Marine Recyclers 2010; Johnson Motors 1960, 10).

At this point it is helpful to present a brief overview of the violent weather Lake Minnetonka's watercraft and residents have experienced because of the number of wrecks MHM has located that sank after 1940. Some of these wrecks have no obvious sign of damage that would sink them and carry equipment that would have been recyclable – like Anomaly 31's Johnson outboard, the inboard engines of other wrecks, anchors, batteries, cleats and other accessories – prior to a purposeful sinking. Two tornadoes moved through Upper and Lower Lake Minnetonka in 1965, one ending at Navarre and the other causing extreme damage in Deephaven. These tornadoes come to mind when people think of storms on Lake Minnetonka. However, the lake's violent windstorms and tornadoes have been documented for over 150 years.

Lake Minnetonka Storms. The earliest recorded storm on Lake Minnetonka also resulted in the lake's first wreck. In November 1857, before any steamboats plied the lake, a schooner was hired to move a family from North Arm to Minnetonka Mills on the eastern shore of Grays Bay at the source of Minnehaha Creek. The schooner capsized in a violent gale over night; six people died including two children while a 14 year-old boy survived. MHM located two brief descriptions of a storm that sank the Wayzata Bay Wreck (21-HE-401, a model barge) on September 29, 1879 as "the storm last night proved a regular screamer at Lake Minnetonka. The wind held high frolic, and succeeded in tipping over a small steamer anchored near the Wayzata shore, and sinking a barge" – and the storm was also called "lively". For nautical archaeologists to pinpoint the sinking date of a wreck that was not well known or was an unnamed vessel is rare in maritime historical research. One storm on July 12, 1885 is famous for its ferocity and the 10 fatalities associated with the sinking of the steamer *Minnie Cook*.

Sheets of rain, incredible lightening, and gale force winds sank the steamer just inside Wayzata Bay killing the former mayor of Minneapolis A. C. Rand, Mrs. Rand, their two children, their nephew, and five other people. The next year in Wayzata Bay, three of four men drowned after their rowboat capsized in extremely high wind and waves. Throughout Lake Minnetonka's boating history, squalls have been described and boats have sunk during them, including a sloop owned by George Brackett. Early in the boating season of 1894, Brackett's two sons and three friends set sail with some friends in the new improperly-ballasted sailboat, hit the squall, and the boat went to the bottom north of Big Island. The five men were rescued within an hour. In addition to these smaller steamers, sailboats, and rowboats, even the largest steamers on the lake had difficulties in inclement wind and weather. In August 1895 the 160-foot sidewheeler *City of St. Louis*, while loaded with 350 passengers, could not make her intended landing because of high wind and waves, her captain opting to beach her in front of the Lake Park Hotel on Tonka Bay. Other early storms reported include a tornado in late August 1904 that caused A. C. Loring's launch, probably the gasoline-powered *Canihaukee*, to turn turtle and her engineer was thrown from the lake onto the shore; in mid-August 1905 a 50 mph waterspout was spotted between Cottagewood and Big Island; and a violent windstorm destroyed several cottages along Lake Minnetonka's shoreline in mid-July 1910 (*Bemidji Daily Pioneer* 1910; *Little Falls Weekly Transcript* 1885, 1895; McGinnis 2010, 29; *Minneapolis Journal* 1905; *Minneapolis Tribune* 1879; *Minnetonka Record* 1905; *New Ulm Weekly Review* 1886; *Northwestern Tourist* 1894; *St. Paul Globe* 1879; *Willmar Tribune* 1904).

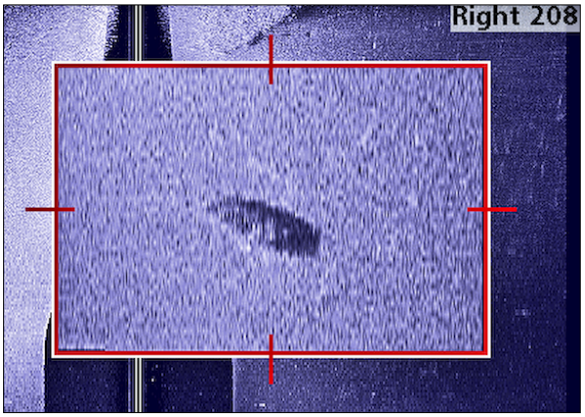
Jumping to the mid-20th Century, storms and tornadoes caused significant damage to property – including the destruction and sinking of watercraft. Newspaper headlines describe the fate of vessels as "Lake Boats Meet Storm's Fury As Bay Becomes Raging Sea" in mid-October 1949. What were described as "hurricane-like winds" in Wayzata Bay sank two boats, two others were battered against rocks, another 10 vessels were damaged, and docks were nearly destroyed. The lake water was pushed over its banks and covered the Great Northern Railway, loosening the railroad bed and the riprap that stabilized the shoreline. In mid-July 1951, the Orono Boat Works was damaged by a stronger storm than the one experienced two years earlier, and in June 1952, a tornado moved through the lake area and "left a wreckage trail". In mid-July 1955, boats in Carson's Bay capsized due to strong wind and waves that also caused other damage around the lake, as did winds in late May 1964. Of course the six tornadoes of May 6, 1965, caused the greatest damage to the Twin Cities area ever recorded – and to Lake Minnetonka's communities. Four F4, one F3, and one F2 tornadoes moved through seven counties of the metropolitan area in just over two hours. Tornado #1 was an F4 storm and greatly affected Upper and Lower Lake Minnetonka through to Navarre. Tornado #2, the 'Deephaven tornado', was also an F4 storm and affected Lower Lake Minnetonka (National Weather Service 2010). In regards to watercraft, it took weeks to clear damaged boats from storage buildings such as those on Carson's Bay that were destroyed by the storm and from marinas around the lake. As it was characterized, "some residents could not find their boats...[that were] blown away in the storm". The HCSWP issued warnings to boaters concerning debris floating in every section of Lake Minnetonka. In early June 1965, the director of the Boat and Water Safety Committee

instructed boat owners to report their destroyed boats to the Department of Conservation so the license numbers could be inactivated and that transferring a number from one boat to another was illegal. Further, all replacement watercraft required registration before they could be operated on any body of water in Minnesota. By mid-July the lake communities were recovering from the storms, including the "Old Minnetonka Boat Works storage building, long a landmark on Carson's Bay in Deephaven before the May 6 tornado dumped it into the lake, will be rebuilt on the same site....The old barn-like structure housed 135 boats...but the new building will not have as great a capacity" (*Deephaven Argus* 1965a-d; *Minnetonka Herald* 1949, 1951b, 1952, 1955a; 1964; *Minnetonka Record* 1965a).

Examples of boats damaged or sunk by Lake Minnetonka storms over the years (*Deephaven Argus* 1965a; *Minnetonka Herald* 1949, 1965; *Minnetonka Record* 1905

The amount of data MHM has accumulated about Anomaly 31 is significant, but without further work her model and year of manufacture cannot be determined. One of the main reasons for this is her infestation by zebra mussels. MHM suspects the wreck has brand name emblems on both sides of her stern but they are obscured by the shells. The wreck's design suggests several watercraft makers that carried models of this size including Minnesota's Crestliner, Tomahawk, and kit-boat company Lugar, along with Starcraft, Sea King, and Lone Star of the mid-1950s to early 1960s, but research has not produced a match thus far. MHM is confidant Anomaly 31 sank no later than 1965 – and probably in May 1965 – due to the year stickers on her hull. The wreck is classified as an historical cultural resource and is protected under the jurisdiction of the DNR until late 2015 when she can be designated as a nautical archaeological site through the OSA.

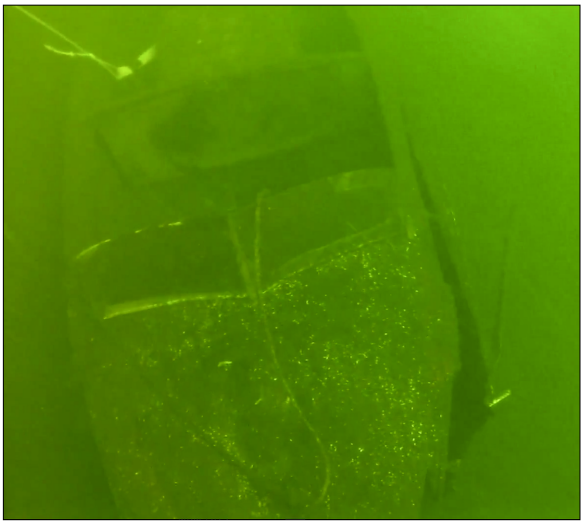
Damaged Bow Wreck (Anomaly 43)



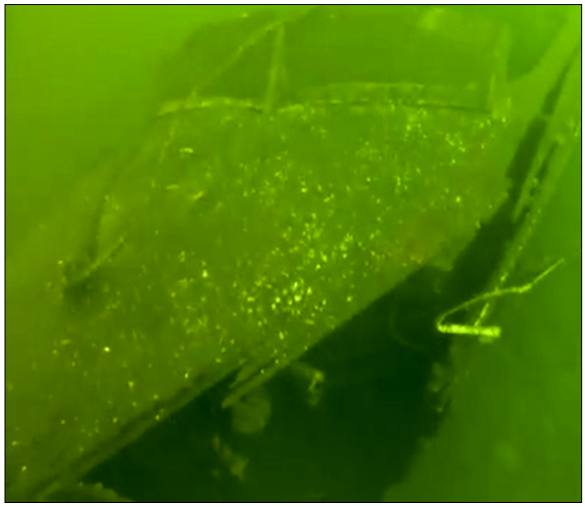
The sonar image of Anomaly 43, the Damaged Bow Wreck.

Anomaly 43 was recorded by MHM during the LMS-1 Project in November 2011. MHM dove on site in October 2013 and determined she is a wooden wreck with extensive damage to her bow that MHM contends occurred in a collision. The Damaged Bow Wreck is a utility 15.6 feet long with a 63-inch beam. Her port side bow is destroyed and separated from the gunwale, the starboard bow is damaged and the 'M' in 'MN of her registration number is attached to the hull, probably made of metal. Part of her damaged bow is still attached on the starboard side and is folded inward – part or all of the registration number is there, covered in sediment. There may be a partial State of Minnesota year validation sticker aft of the 'M' as well; this attribute and the remaining numbers and letters of the registration number will be re-investigated. At the bow, a small bit of debris lies on the bottom. The hole in the wreck's bow is large enough to see through to the dashboard; the backsides of the instrument dials are visible. The hull is painted red with white and black accent stripes at her chine and the single stern engine exhaust is slightly to port of the centerline. She has a bow eye with a line attached to it and a fragment of the base for her navigation light on her foredeck, her Iva-Lite spotlight is hanging from its cable on her starboard side near the windshield, and there is a chock on her port side. At the stern a ski pull or lifting eye has a line connected to it that leads to her deployed grapnel anchor, she has a chock on the port side and a cleat on the starboard side, a mast light at her amidships, and her gas cap is in place. The dashboard dials are intact and the steering wheel is in place. The wreck has an inboard engine with the cover in place amidships and her 6-volt battery and propeller shaft are visible through damaged deck planks. The Damaged Bow Wreck lies in a section of Lake Minnetonka that has a hard bottom, allowing her to lie on top of a sandy surface with little silt build-up – and giving a

complete view of the turn of her bilges. The wreck is not completely covered in zebra mussels, but they are present and will spread.

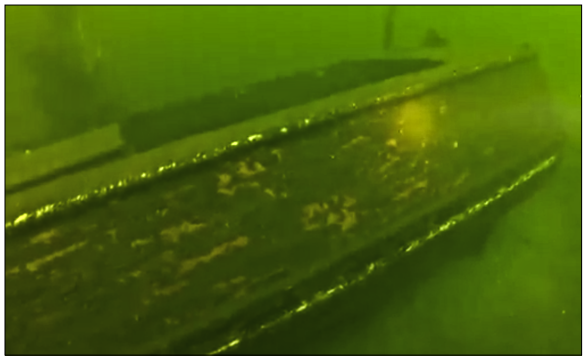


The Damaged Bow Wreck (by Ed Nelson).

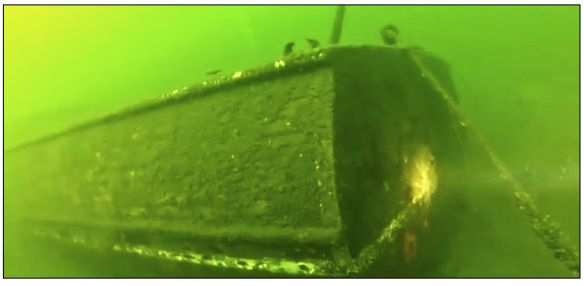


The port side bow was damaged in a collision (by Ed Nelsion).

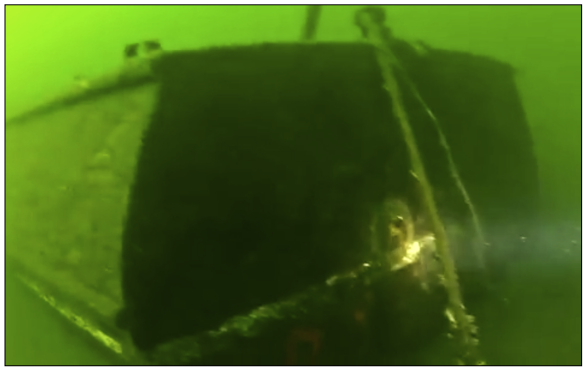
The hole is large enough to expose the cockpit and it attracts fish (by Ed Nelson).



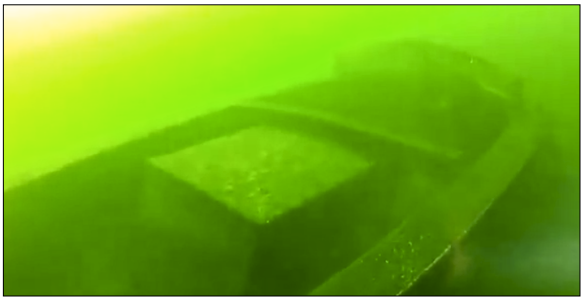
The port side of the wreck (by Ed Nelson).



The port side aft hull has a chock on its gunwale (by Ed Nelson).



The stern has a mast light and a ski pull with a line attached (by Ed Nelson).

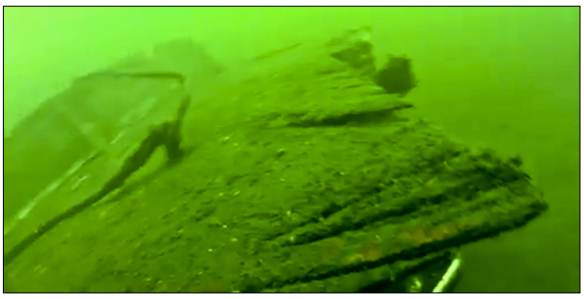


A view of the wreck from starboard side aft showing the doghouse (by Ed Nelson).

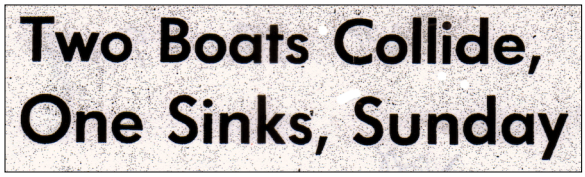
The dashboard, steering wheel, and windshield are intact (by Ed Nelson).

The starboard side bow may have a year validation sticker (by Ed Nelson).

The starboard side bow has a metal 'M', half of the license designation in 'MN', still adhered to the hull. The rest of the registration number is probably on the broken part handing from the wreck (by Ed nelson).



The foredeck has a lifting eye with a line attached to it (by Ed Nelson).



The collision might have occured in September 1969 (*Mound Westonka Minnetonka Sun* 1969b).

MHM cannot identify the Damaged Bow Wreck's model at this time but research is on-going. MHM enlisted the help of the Century Boat Club forum on Facebook and many suggestions were put forward, but the wreck is unique in different ways. She may be the product of a small lesser-known boat yard and might have been built locally. She

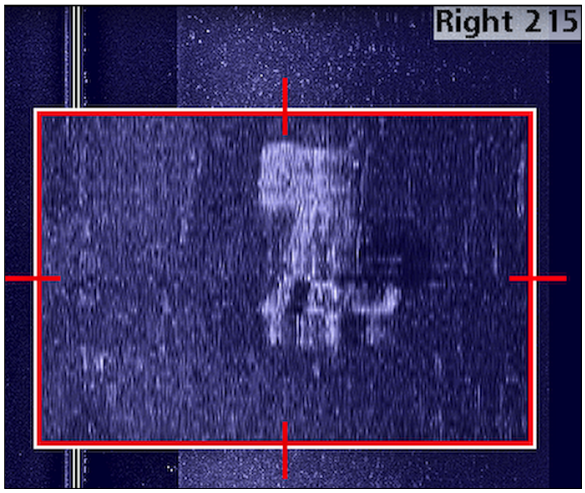
probably dates from the mid-1940s to the mid-1950s. In the future MHM will attempt to record any other registration numbers that have survived on the section of the damaged bow that has folded inward. MHM has determined a possible sinking date for the wreck: September 14, 1969. Two boats collided at 12:32 am and a third boat rescued all involved; MHM postulates the bow line may have been tied to the boat to keep her afloat long enough to rescue her two passengers. The boaters involved in the accident, one from Excelsior and the other from Deephaven, claimed they did not see the other – one boat sank and the other sustained substantial damage. The accident occurred "south of Big Island" (*Mound-West Tonka Minnetonka Sun* 1969b). That account doesn't describe precisely where the wreck lies, but it is understandable why the survivors characterized the wreck's location that way since she is southeast of the island. The wreck is classified as an historical cultural resource and is protected under the jurisdiction of the DNR until her disposition date can be verified.

MHM found numerous examples of boat collisions on Lake Minnetonka from the 1950s-1970s.

(*Minneapolis Morning Tribune* 1963; *Minnetonka Herald* 1957; *Minnetonka Pilot* 1957; *Minnetonka Record* 1958; *Mound-Westonka Minnetonka Sun* 1970)

Owens Cruiser Deluxe Wreck (Anomaly 55)

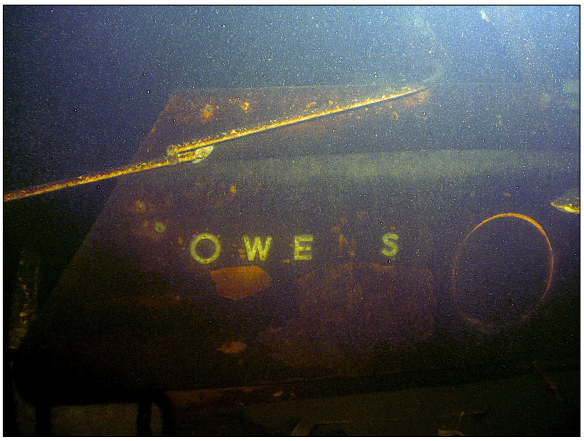
During the LMS-1 Project in November 2011, MHM recorded the large and irregular sonar signature of Anomaly 55. The nature of the anomaly was a mystery because of the odd shape. MHM dove on the anomaly in November 2013 and determined it is a wreck – a 1959 wooden 22-foot Owens Cruiser Deluxe (Handley Marine Division 1959). The wreck is missing her bow and was obviously involved in a collision. The bow is broken off at the point where the foredeck met her cabin windshield and unfortunately, her registration number went with the bow debris. The windshield is intact but the bulkhead that comprised the interior forward wall of the vessel's dining area is gone. The wreck has a smooth hull (as opposed to the lapstrake option also offered for this Owens model) and a square transom. The vessel had a railing attached to the gunwale by small stanchions that were torn off during the wrecking process. Some stanchions have survived intact and there are remnants of some stanchion bases on the port and starboard gunwales amidships and on the transom. At least one stanchion dislodged and fell into the wreck, visible on top of a thin layer of silt inside the hull. The railing is not among the wreckage. The wreck's superstructure is largely intact including her port and starboard sliding and porthole-style windows, a roof with railings, spotlight, steering wheel, dashboard, and a ladder lies folded up on top of the roof. On both sides of the superstructure aft of the windows the "OWENS" brand name is clearly seen, made of raised letters like the Owens Landau Wreck (Anomaly 91). A frame for a bimini top, not standard equipment for this watercraft type, is attached to the superstructure's side above the "O" on the starboard side and the "S" on the port side. A captain's chair that could be stowed on the starboard side of the bridge is deployed and lying dislodged on the deck. The door to the cabin is either gone or pushed inward and the condition of the kitchen and head are unknown, although the dining area is at least partially destroyed



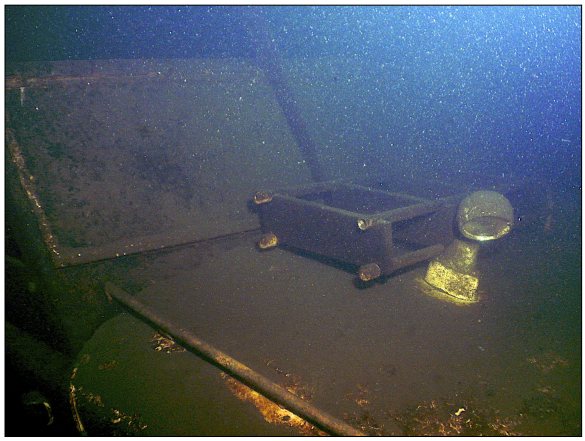
The sonar image of the Owens Cruiser Deluxe Wreck. Its irregular shape does not suggest a wreck because the bow, that is downward in the scan, is missing.

The smooth-hulled 1959 Owens Cruiser Deluxe (*Holiday* 1959, 112-113).

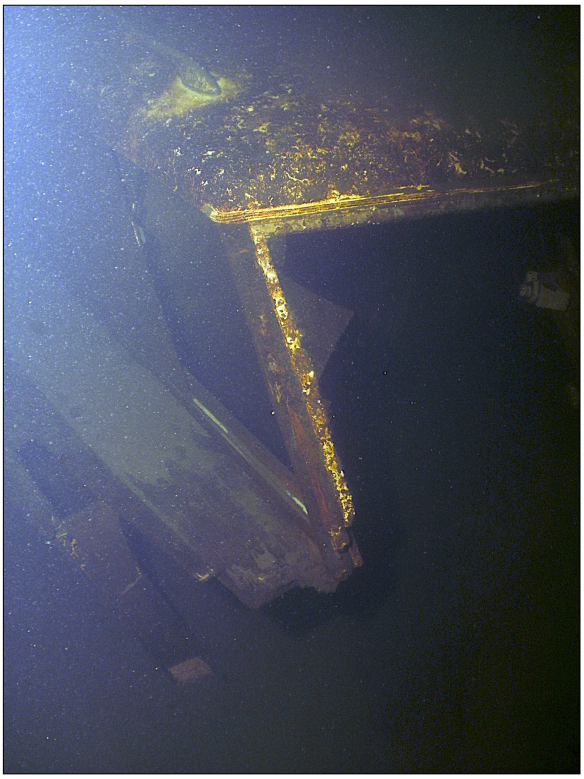
since its forward wall is missing. The site is 16.4 feet long by 8.2 feet wide; in 1959 the Owens Cruiser Deluxe was 22 feet long and 7.8 feet in the beam.



The Owens Cruiser Deluxe Wreck's starboard side porthole-style window and the non-standard bimini frame (by Mark Slick).



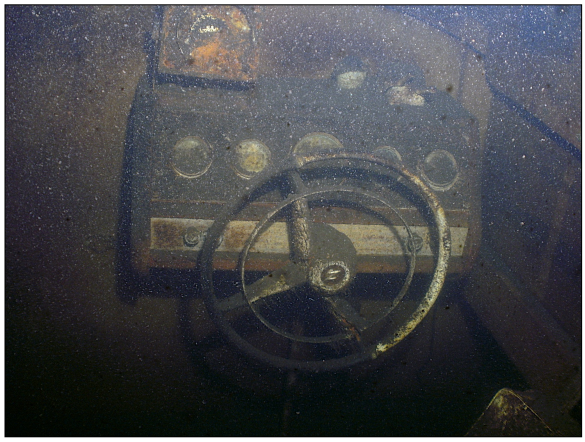
The wreck's windshield and spotlight are intact and a ladder is sitting on the roof (by Mark Slick).



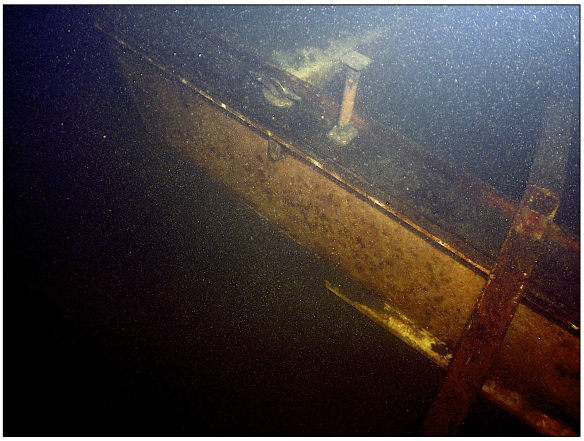
The cabin windshield is gone and the bulkhead separating the bow storage area from the dining room was sheared off the Owens Cruiser Deluxe during the collision that sank her (by Mark Slick).

The door to the wreck's cabin is open (by Mark Slick).

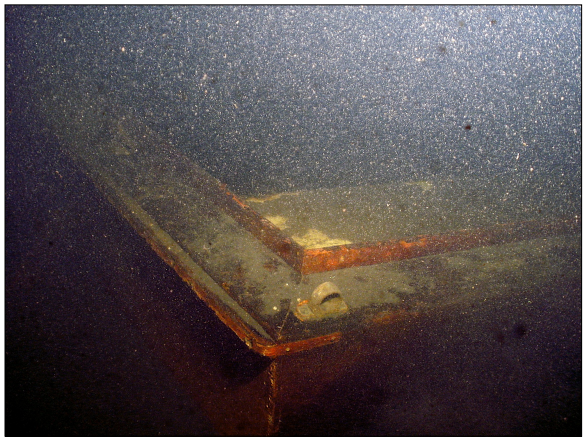
The retractable captain's chair is hafl-deployed and the bimini frame is out of place (by Mark Slick).



The steering wheel and console are intact (by Mark Slick).

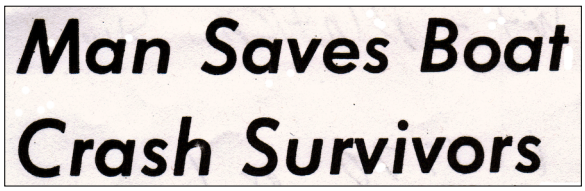


The starboard side aft quarter is intact except for the railing that used to be held up by the stanchion in the middle of the image (by Mark Slick).



The port side aft quarter and transom (by Mark Slick).

MHM has determined the collision that sank the Owens Cruiser Deluxe Wreck occurred on Friday, July 31, 1970 around midnight. The Owens collided with an 18-foot runabout of unknown model, sinking both boats. A boater in a 21-foot Trojan cruiser heard cries for help in the water as he was passing nearby. The rescuer claimed, "I heard cries. I turned on the spotlight and all I could see was debris, and four people in the water amid the debris." Three passengers on the runabout, two women and one man in their 20s, were killed in the collision. One of their bodies was recovered within an hour of the collision and the others were located before Saturday evening. The accident was investigated by the HCSWP. The wreck of the runabout is yet to be found and may


Man Saves Boat
Crash Survivors

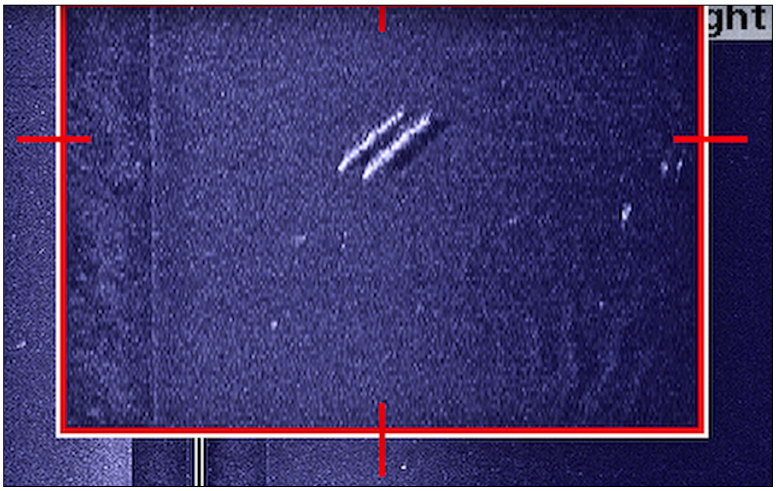
The runabout-cruiser late night collision had three fatalities and four survivors (*Mound-Westonka Minnetonka Sun* 1970)

be one of MHM's other anomalies on the bottom of the lake, or she may have been raised by her owner. A photograph of debris collected from the crash site that was floating on the lake's surface shows the wreck's bow in several large pieces with the round foredeck hatch cover still attached, as well as smaller wooden pieces and a railing (*Maverick* 1970; *Mound-Westonka Minnetonka Sun* 1970). The wreck is classified as an historical cultural resource and is protected under the jurisdiction of the DNR until August 1, 2020 when she can be designated as a nautical archaeological site through the OSA.

The runabout-cruiser late night collision had three fatalities and four survivors. The debris collected by the police after the collision between the runabout and the cruiser is above (*Mound-Westonka Minnetonka Sun* 1970). The round hatch cover and bow is identical to the 1959 Owens Deluxe Cruiser still afloat pictured below.

West Arm Pontoon Boat Wreck (Anomaly 83)

Anomaly 83 was recorded by MHM in May 2012 during the LMS-2 Project and described in the LMS-2 Project Report because of the nature of the acoustical signature; two pontoons sitting off the bottom of the lake and it appears that the pontoons are still attached to the boat deck underneath them. MHM dove on the wreck in early October 2013 and confirmed that she is a capsized pontoon boat. The wreck lies on exceedingly soft silt and the visibility on the wreck site is zero, but with a light MHM was able to see about 6-12 inches. The bottom of the wreck is 22.6' feet long by 7.6' wide, has a square transom with some wooden elements (determined by touch), has no motor, and lies in about 21 feet of water. The silt completely covers any deck the wreck may have and it was not possible to find a registration number. The pontoons are made of steel and the port side float is rusted through in places. In cross section the pontoons are angular, not rounded. MHM cannot determine the wreck's age or when she sank, but with further on-site reconnaissance some questions may be answered. Since the pontoon boat was first developed in Minnesota by Ambrose Weeres of Richmond, MN in



The West Arm Pontoon Wreck is distinct in the sonar image. On the site, MHM archaeologists could not see the wreck except with strong lights. Useful photographs were not possible.

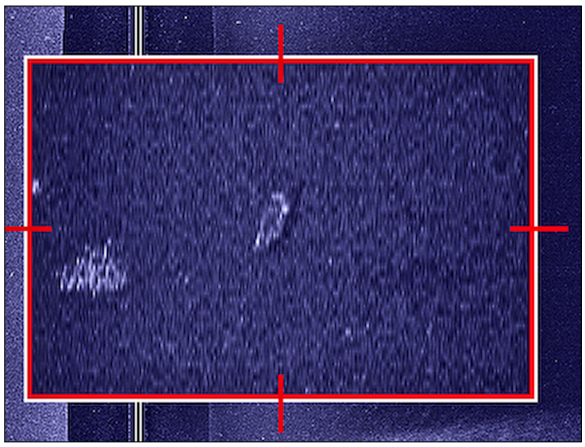
This ad indicates that Weeres pontoons were offered for sale in the Lake Minnetonka area in 1955b, only three years after their development in Richmond, MN (*Minnetonka Herald* 1955b).

1952, MHM hopes the wreck is a Minnesota-built Weeres pontoon or possibly a Boatel model from Mora. The wreck is classified as an historical cultural resource and is protected under the jurisdiction of the DNR.

During MHM's archaeological survey of Big Island in 2007, the remains of a pontoon boat were located in the woods.. The two pontoons in the photograph are similar in shape to the pontoons on Anomaly 83.

This modern pontoon paddle boat has angular pontoons like those on the West Arm Pontoon Wreck (Flickr 2008).

Sea King Aluminum Canoe Wreck (Anomaly 107)

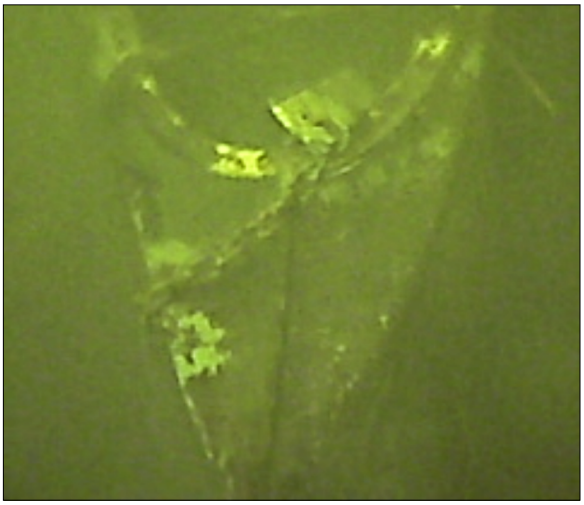


The sonar image of the Sea King Aluminum Canoe Wreck.

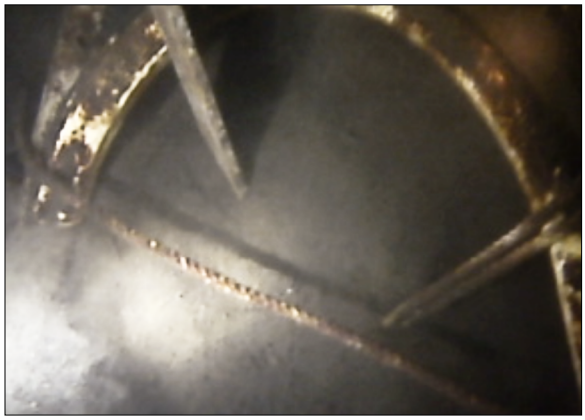
During the LMS-2 Project in May 2012 MHM recorded the sonar image of Anomaly 107. MHM dove on the wreck in early October 2013 and confirmed that she is an aluminum canoe wreck. She has a registration number, MN 6372 CD, indicating she is a 1967 Sea King brand last licensed in December 1977. Sea King canoes were sold through Montgomery Ward, along with Grumman canoes and other Sea King boats. Her model number is 26179, she was constructed with flotation foam, and had a 780 pound carrying capacity (John Nordby, personal communication, 8 October 2013; Outdoors, Inc. 1972). She is 17 feet long, 37.5 inches at her widest beam, has small enclosed fore and afterdecks, bow and stern eyes, three thrwarts are visible spanning her silt-filled hull – the middle one is broken – and she has one seat fore and one aft. Her gunwale and decks are painted red. She carries a Danforth anchor, chain, and line at the bow and a line is attached to the stern eye; the aft thwart also has a line associated with it. As with all canoes, the watercraft is double-ended but the placement of the seats in relation to the thwarts indicates the end with the anchor is the bow. On the port side bow there is a large gash in the hull above the waterline. In calm waters this damage would not be an issue, but in high wind and

waves MHM could foresee a problem where water could flood the hull through the gash. MHM contends the canoe was not scuttled on purpose since she still carries her expensive anchor. The wreck is classified as an historical cultural resource and is protected under the jurisdiction of the DNR until late 2027 when she can be designated as a nautical archaeological site through the OSA.

The canoe above is a 1972 Sea King Aluminum Canoe sold by Montgomery Ward. She is nearly identical to the 1967 wreck with the exception of the fore and after deck design. The wreck has rounded decks and a hull seam on both ends while the canoe above has a straight deck and no seam.



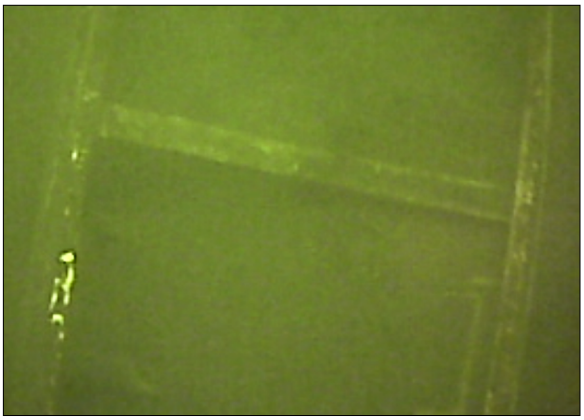
The canoe wreck's bow showing the deck's seam and rounded nature. The Danforth cnachor chain is visible.



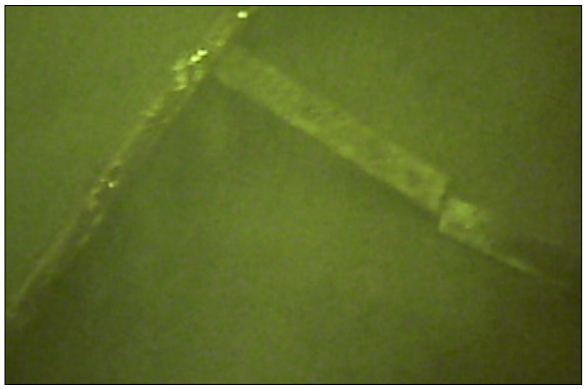
The Danforth anchor flukes are buried in sediment wihtin the hull and lines are evident.

The seam of the foredeck.

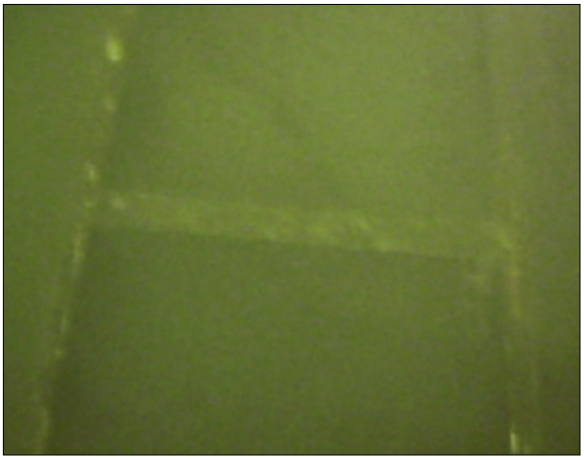
The gash in the port side hull at the bow.



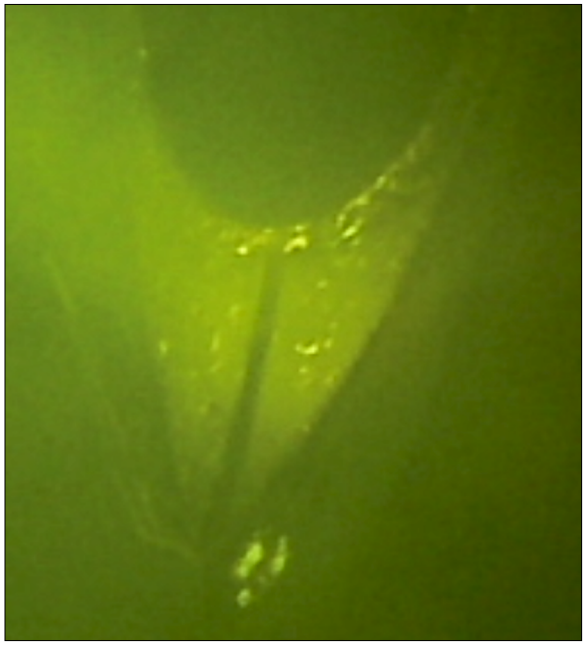
The foreward thwart.



The amidships thwart is broken.

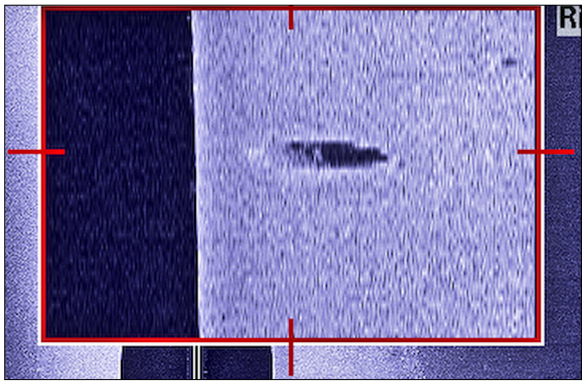


The aft thwart (above) and the stern (right).



Span Wreck (Anomaly 32)

During the LMS-1 Project, MHM recorded the sonar image of Anomaly 32 in November 2011 and dove on the object in mid-October 2013. MHM did not know what to expect upon diving on this anomaly since its irregular shape was distinctly not 'boat-like' but it cast a significant acoustical shadow. MHM confirmed she is a capsized fiberglass wreck and her stern is imbedded in the lake bottom while her amidships section and bow are suspended in the water column. The wreck's unique position does explain the odd sonar signature. The wreck has an inboard/outboard motor and her lower unit and propeller extend from her square transom onto the lake bottom. Her stern engine cover is in place and it seems that the wreck's rear seats are resting in the silt along with the engine cover. Anomaly 32's registration number is MN 3752 EG and in Minnesota's official records she is listed as a 1970 Span America 18 foot long boat registered through December 1991. MHM is confidant the Span Wreck was not scuttled due to the presence of her engine, propeller, metal fittings, steering wheel, and windshield; these valuable items would have been removed from her hull prior to her sinking if she was scuttled. MHM searched local and Twin Cities newspapers for mention of a wreck between 1990-1991 that fit the wreck's description but none was found (John Nordby, personal communication, 16 October 2013).



The sonar image of Anomaly 32 casts a significant acoustical shadow.

However, the year of manufacture cannot be 1970 nor can she be a 'Span America' brand. In 1958 the Span America Boat Company was located in Fort Dodge, IA, with branch manufacturing plants in Crescent City, FL by 1959, Santa Ana, CA by 1960, and their operations were projected to be expanded to Lake Como, FL in 1961. By 1962, however, Span America Boat Company was based in Red Wing, MN exclusively and manufactured four fiberglass boat models that year. By 1963, Span America watercraft were called Span Boats and were produced by the Rice Lake Boat Company of Rice Lake, WI and by 1966 were built in Cameron, WI. One of the boats offered by this 'new' company in 1963 was the La Sabre – one of the first, if not *the* first Span inboard/outboard engine model

The 1963 Span La Sabre (above) seems to have a flatter stern hull bottom than later models, like the 1966 version below (Kiekhaefer Corporation 1963; Span Boats, Inc. 1966).

offered for sale. The size and fittings of the Span Wreck indicate should could be a La Sabre or she could be a Span Mustang. The main difference between the La Sabre and Mustang is the stern design. The La Sabre's stern has covered storage on either side of the engine while the Mustang had seating on either side of the doghouse-style engine cover. At this point MHM cannot discern the wreck's stern design nor can the year Anomaly 32 was constructed be determined, but she could not have been manufactured before 1963 and could have been built until at least 1966. However, due to the flat nature of the wreck's bottom at the stern, MHM contends Anomaly 32 is probably a 1963 model if she is a La Sabre. The 1964-1966 La Sabres were designed with a deeper 'V' at the stern, while the wreck's bottom at the stern is flat. An argument in favor of the Mustang model is possible smooth nature of the hull's sides; the La Sabre had a faux lapstrake design on that would probably be discernible even with the profusion of zebra mussels adhered to the wreck. The history of Span America/Span Boats is sketchy and the company's assets were sold several times. Internet forum discussions are numerous but actual documents, beyond surviving brochures, are scant and not readily available (Kiekhaefer Corporation 1963; Rice Lake Boat Company 1964; Span America Boat Company 1959; 1960a; 1960b; Span-America Boat Company, Incorporated 1962; Span Boats, Inc. 1965; 1966).

The 1965 Span Mustang (Span Boats, Inc. 1965).

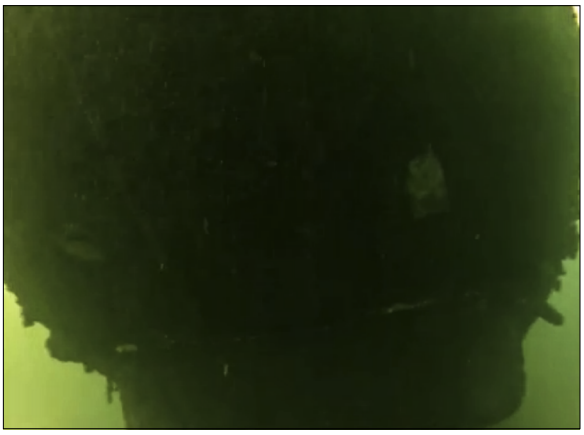
The 1966 Span Mustang. Note the obvious doghouse-like engine cover with seats on both sides (Span Boat, Inc. 1966).

The Span Wreck's foredeck is profusely covered in zebra mussels, but a navigation light and two air scoops are clearly seen, as is a groove in the formed fiberglass of the deck. Brochure photographs also show a bow lifting eye, two chocks on port and starboard near the bow, and a bow eye on the underside of the bow; even though this portion of the wreck is exposed, the zebra mussels are too thick to discern this attribute. The gunwales probably have two step plates near the stern seats and two cleats on the port and starboard transom, and there are lines evident near the stern. A spotlight on the port side gunwale near the passenger seat next to the windshield is not standard for La Sabre and Mustang models and neither are the air scoops (Span Boats, Inc 1965, 1966). The wreck's bottom (centerline length) measured 16.17 feet with a 7-foot beam, but zebra mussel build-up must be taken into account and the wreck's beam is more

likely 6.33 feet (her advertised beam). The entire site is 19 feet long accounting for the lower unit and propeller protruding from the hull.

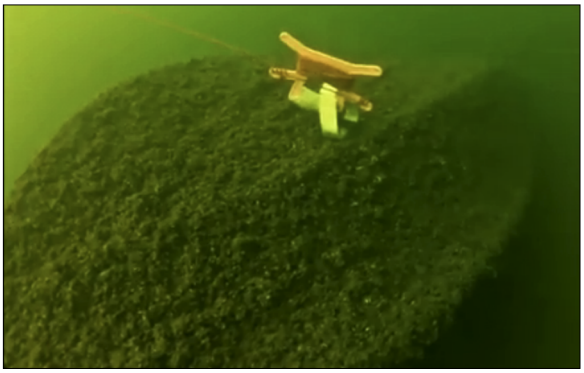
The port side bottom of the hull (by Kelly Nehowig).

The bow has a thick build-up of zebra mussels (by Kelly Nehowig).

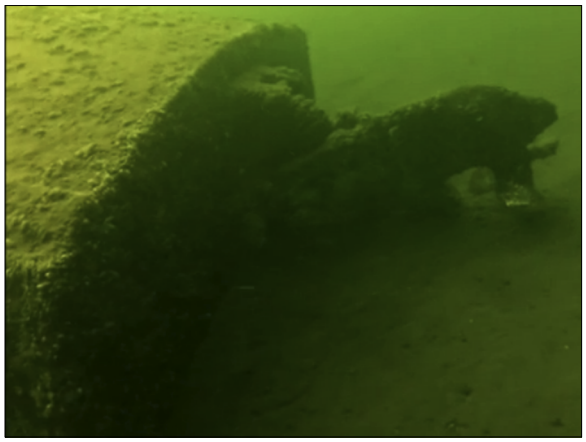


The two lighter coloried objects are non-standard air scoops (by Kelly Nehowig).

The seats and other fittings are still in place (by Kelly Nehowig)



The starboard side bow and chine. The orange and yellow object is the line reel with weights of the 'diver down' buoy (by Kelly Nehowig).

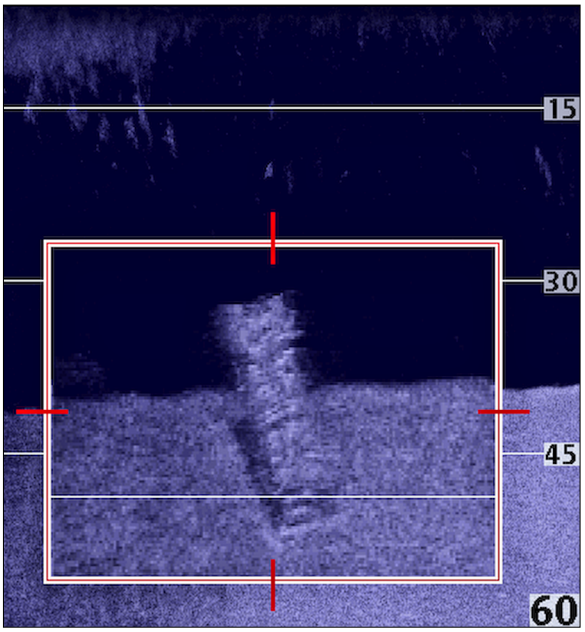


The lower unit and propellor extend off the square transom (by Kelly Nehowig).

However, apparently Span Boats were manufactured until 1969 and the company's assets were auctioned off in 1970[2]. Therefore, the Span Wreck could not have been a 1970 model, but MHM surmises she may have been purchased or first registered in Minnesota in that year. While conducting research on boat registrations in Minnesota, MHM has discovered discrepancies in the vital information provided by boat owners during the licensing process. The boat may have been registered in a different state prior to 1970 and her owner did not know her year of manufacture, she could have been part of the Span Boats inventory auctioned off in 1970 and her new owner assumed she was constructed that year, or her owner simply did not know how old the boat was in 1970 and simply chose that date. Since she was last registered in 1991 and probably sank during that year, the wreck is classified as an historical cultural resource and is protected under the jurisdiction of the DNR until late 2041 when she can be designated as a nautical archaeological site through the OSA.

White Chevrolet Caprice Classic Two Door Coupe (Anomaly 57)

During the LMS-1 Project MHM recorded the sonar image of Anomaly 57 in September 2011. Like Anomaly 43, the acoustical signature of Anomaly 57 was odd, but it seemed to be a rectangle protruding from the lake bottom. MHM surmised the object might be a fish house, although it appeared to be too tall. MHM dove on the anomaly in November 2013 and determined that it was an overturned white car with its grill, hood, windshield, and passenger compartment roof resting on the lake bottom, with its trunk suspended in the water column. MHM contends the car went through the ice accidentally while parked since both windows are closed, possibly when its owner was ice fishing. The site is 18 feet long by 6 feet wide and MHM has determined Anomaly 57 is a 1974 white Chevrolet Caprice Classic Two Door Coupe. The thick pillar in the 'B' section of the car, the rear quarter 'opera' windows, low placement and discontinuous nature of the side trim molding when compared to other model years, 'Caprice Classic' fleur-de-lis emblems on its pillars, and the placement of the taillights above the bumper are diagnostic of the 1974 model. The car has a 'Caprice Chevrolet' emblem on its trunk. The car has other defining attributes on the grill and in the passenger compartment, but



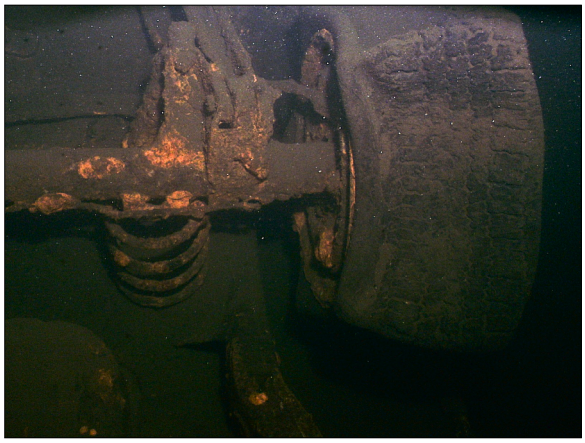
MHM re-scanned Anomaly 57 in October 2013 and recorded this down image.

[2]Andreas Jordahl Rhude, an antique and classic boat owner, restorer, and member of the Bob Speltz Land-O-Lakes Chapter of the Antique and Classic Boat Society, has conducted research on several boat-building companies, including Span America. Some information collected about Span America and Span Boats has been in the oral tradition and Mr. Rhude willingly shares his knowledge on several online forums.

those are not accessible. The tires have compressed because of the water pressure, the vehicle shows some signs of rust, and it is too deep to be harmed by zebra mussels. MHM determined the model year because of certain attributes such as rear taillight design and placement, pillar size, the presence of opera windows, and the placement of the side trim.

A silver 1974 Caprice Classic Coupe – images of white Caprice Classic Coupes that match Anomaly 57 are rare (left) – and the Caprice Classic Emblem (General Motors Corporation 1974).

The windshield and hood are buried in silt to the opera window in the 'B' section of the car. The Caprice Classic fleur-de-lis is seen on the pillar (above left). The 'Caprice Chevrolet' emblem, although damaged, is still attached to the car's trunk (above right). The car's license plate (below left) and rear quarter panel (below right). The rear of the car is suspended in the water column (by Mark Slick).



The air in Anomaly 57's tires has compressed because of the water depth. The rear wheel fender skirts have been removed from the 1974 Caprice Classic Coupe as seen on the right; compare to the photograph of the silver coupe above where the skirts are in place (by Mark Slick).

MHM reported Anomaly 57 to the HCSWP since the car might have been stolen, involved in a crime, or missing, but apparently that is not the case. The rear license plate is readable, 249 CTJ, and according to the HCSWP the number has been re-assigned to another vehicle. The latest year validation sticker dates to May 1989. In the future the HCSWP may use the site for search and rescue dive training (Art Saunders, personal communication, 28 October 2013). Anomaly 57 is classified as an historical cultural resource and is protected under the jurisdiction of the DNR until May 2039 when she can be designated as a submerged maritime archaeological site through the OSA.

Update: Aluma-Craft Model R Runabout Wreck (Anomaly 20.1)

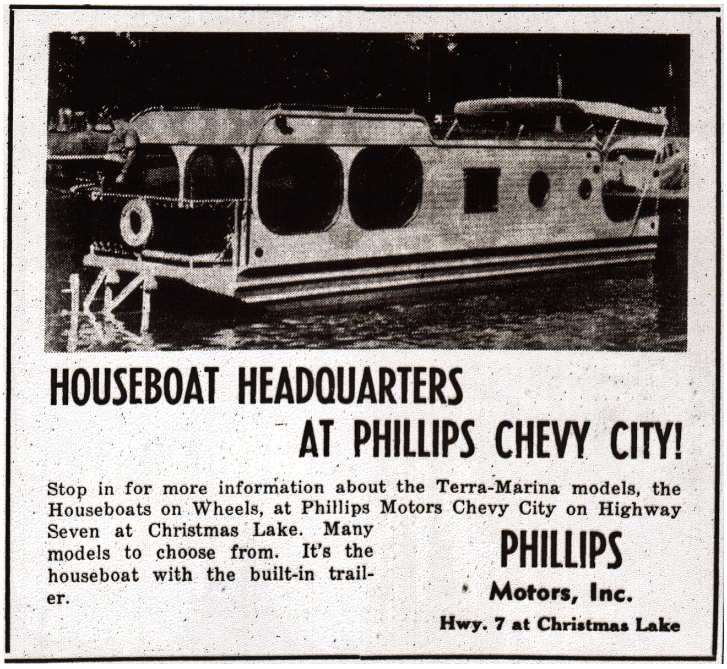
MHM identified Anomaly 20.1 as an Aluma-Craft Model R Runabout constructed between 1949-1959 in the LMNA-1 Project Report. Her registration number is MN 4757 AQ and interestingly, on her port side, her number was affixed to the hull backwards. DNR registration records list her as being constructed in 1948, that she is 12 feet long, is of an unknown make, and was last registered in 1979 (John Nordby, personal communication, 4 October 2013; 7 October 2013). The information associated with this registration number demonstrates that a boat owner can report incorrect and vague data about their watercraft. The Aluma-Craft Model Runabout Wreck could not have been constructed in 1948 because Aluma-Craft began manufacturing this model in 1949 and the wreck's exact size in 11.7 feet, not 12 feet (Cheynne Nordby, personal communication, 28 June 2013). The wreck's registration

Anomaly 20.1 (by Ed Nelson).

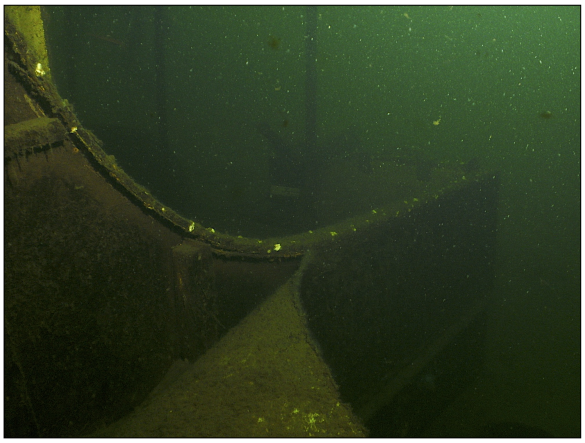
letters, AQ, confirm she was first licensed in 1959. Now that MHM can confirm the wreck was last registered in 1979 and constructed in 1949, she was 30 years old when she probably sank. Anomaly 20.1 is classified as an historical cultural resource and is protected under the jurisdiction of the DNR until late 2029 when she can be designated as a nautical archaeological site through the OSA.

Update: Terra-Marina Houseboat Wreck (Former Crystal Bay Houseboat Wreck, Anomaly 4)

MHM identified Anomaly 4 as a houseboat with a 1959 Evinrude Golden Jubilee Lark Deluxe 35 HP outboard motor in the LMNA-1 Project Report. The wreck sank because of damage sustained in a collision but the undamaged stern has a unique design that MHM could not match with any houseboat examples until a 1965 newspaper ad in a local Lake Minnetonka newspaper featured a Terra-Marina houseboat. The ad suggested readers "stop in for more information about the Terra-Marines models, the Houseboats on Wheels, at Philips Motor Chevy City...Many models to choose from. It's the houseboat with the built-in trailer". MHM also found a reference to a Terra-Marina franchise dealer in Minneapolis in 1960 (*Minnetonka Record* 1965b; Terra-Marina Mfg. Co., Inc. 1960). The stern design matched Anomaly 4, giving MHM a research starting point for the investigation of Terra-Marina boats. Constructed in Houston, TX, Terra-Marina boats (from what MHM can ascertain from anecdotal evidence located through web forums and classified ads selling Terra-Marina houseboats) utilized US military surplus un-powered craft for their hulls. Terra-Marina hulls are steel vessels with wheels attached to an axle amidships and two vertical slots on the scow-shaped bow would take a large triangular towing bar that with a head that would fit onto a ball



Locating this ad for Terra-Marina amphibious houseboats allowed MHM to identify Anomaly 4 (*Minnetonka Record* 1965b).



The port stern quarter of Anomaly 4's superstructure design is diagnostic of Terra-Marina houseboats (by Mark Slick).

hitch. When launched, the wheels submerge with the bottom of the hull. When the boat needs to leave the water, the towbar would be attached and it would roll right out of the water. The Terra-Marina Houseboat Wreck is a significant and rare maritime historical resource and is under the jurisdiction and protection of the DNR.

The 1959 Terra-Marina houseboat using an Evinrude Lark outboard motor is simiar to Anomaly 4. On the trailered example note the triangular towbar attached to the amphibious houseboat (Terra-Marina Mfg. Co. Inc. 1959).

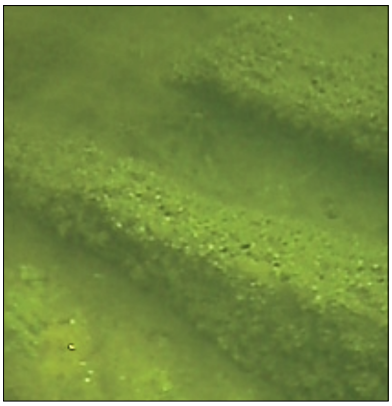
A 1959 brochure featuring a houseboat similar to Anomaly 4 (Terra-Marina Mfg. Co. Inc. 1959).

Anomalies 39, 59, 66

Anomalies 39, 59, and 66 were recorded in September 2011 during the LMS-1 Survey. Their sonar signatures are significant and MHM expected to locate a substantial object or artifact when diving upon them. Instead, MHM found a rock at Anomaly 66's location, a collection of small rocks and discarded rubbish at Anomaly 59, and nothing at the location of Anomaly 39. However, the Anomaly 66 rock does not fit its sonar signature and neither does Anomaly 59. MHM has re-checked the GPS coordinates of the three anomalies and they appear to be correctly recorded. There is another object in the vicinity of Anomaly 66 and it may be the rock MHM located but it may be the wrong object. MHM contends re-visiting the coordinates of these three anomalies is warranted to confirm whether there is or is not a submerged cultural resource or other significantly sized natural formation at these locations.

Anomalies 24.1, 25, 46, 81

Anomalies 24.1, and 25 were located in September 2011 and Anomaly 46 was located in November 2011 during the LMS-1 Project in Lower Lake Minnetonka. Anomaly 81 was located in May 2012 during the LMS-2 Project in Upper Lake Minnetonka. The significant acoustical signatures of these anomalies suggested to MHM that they might be submerged cultural resources. All these anomalies were confirmed to be rocks, both large and small, singly and in once case, a group of them. However, MHM nautical archaeologists only felt Anomaly 81 because of the poor visibility in the Upper Lake's West Arm.



Part of Anomaly 25 covered in zebra mussels.

Anomaly 63.1

MHM recorded Anomaly 63.1 during the LMS-1 Project in September 2011. Due to the fact that the anomaly is curved suggested that it was not a watercraft, but the acoustical signature could have been skewed when MHM's survey boat hit a large wave. The significant acoustical shadow of the object warranted investigation and MHM determined the anomaly was part of a tree.

Anomalies 10, 17, 58, 60.1, 80

Anomalies 58 and 60.1 were recorded in September 2011 and Anomalies 10 and 17 in November 2011 during the LMS-1 Project. Anomaly 80 was located in May 2012 during the LMS-2 Project. Anomaly 17 has no acoustical shadow, Anomalies 10, 58 and 80 have minor acoustical shadows, and Anomaly 60.1 has a definite shadow, but all their sonar signatures are distinctly 'boat-shaped' and warranted investigation.

Conclusion

Ironically, the 'newest' wrecks so far located on the bottom of Lake Minnetonka pose many questions that require continued investigation. The Damaged Bow Wreck (Anomaly 43), Outboard Speedboat Wreck (Anomaly 31), and West Arm Pontoon Boat Wreck (Anomaly 83) present the most archaeological questions. The partial registration numbers of Anomalies 43 and 31 require further investigation and the possible reasons for their sinking – a 1969 collision and the 1965 Deephaven tornado – at this time remain unverifiable but viable options. Further, the construction material of the Outboard Speedboat Wreck requires clarification. Anomaly 83's nature, beyond the fact that she is a pontoon boat, remains unknown. Any attempt to record her possible registration number would entail a significant amount of dredging in zero visibility conditions and while that is not an impossible situation to contend with, it would be an expensive project. MHM will search for the registration number on the starboard bow of the Terra-Marina Houseboat Wreck (Anomaly 4). Now that the nature of the hull is known, locating the number should simply be a matter of a bit of silt movement and using strong lights. Further, MHM will search for the wreck's builder's plate, although the extensive damage to her superstructure might hinder that effort.

The *Saucy Kate* Wreck (21-HE-420) is the most historically significant site investigated during the LMNA-2 Project. Her story as a popular and busy steamer on Lake Minnetonka from 1878-1899 is well known and she was the icon of Excelsior's sesquicentennial in 2003. The *Saucy Kate* Wreck is a tangible piece of the lake's economy, commerce, and transportation in the late 19th Century, especially since her last owner was Captain John R. Johnson. Captain Johnson was one of the most noteworthy maritime figures in Lake Minnetonka's history. Up to this point, Johnson is linked to the *Saucy Kate* Wreck, the *Priscilla* Wreck (21-HE-404), the *Minneapolis* Wreck (21-HE-400), and possibly the St. Albans Bay Wreck (21-HE-403). From a nautical archaeological preservation perspective, *Saucy Kate* is deep enough not to be affected by zebra mussels and her condition is good considering she burned prior to her sinking and she has been looted over the years. Complete documentation of the *Saucy Kate* Wreck would answer numerous questions about her construction and demise, as well as damage incurred by humans over the decades.

The historical importance of the Marine Launch Boilers Site (21-HE-421) – to Lake Minnetonka specifically – cannot be over-stated. As the only known examples of power plants that propelled the lake's mid-sized steamers, the details of their design and construction provide insight into the workings of the watercraft they were placed in. Perhaps with further research MHM can pin-point the precise steamers that carried these boilers and possibly their manufacturers.

While the nature, age, design, and construction of the Century Deluxe Utility Wreck (21-HE-423), Correct Craft Aqua Skier Deluxe Wreck (21-HE-424), Aluma-Craft Model-R Wreck (Anomaly 20.1), Span La Sabre Wreck (Anomaly 32), Owens Cruiser Deluxe Wreck (Anomaly 57), and the Sea King Aluminum Canoe Wreck (Anomaly 107) are known, many details about the maritime histories of these wrecks remain unanswered.

MHM will continue to search for historical records pertaining to the histories of these sites and document the nautical archaeological details that can be compared to the graphic representations of these watercraft that exist. Like the Damaged Bow Wreck and Outboard Speedboat Wreck, these six sites (and others studied during the LMNA-1 Project) might be relatively 'modern' when compared to *Saucy Kate* or the other wooden steamer wrecks known in the lake, but in many ways there is much less data available about them than the older sites. Information gathered by MHM's volunteer Kelly Nehowig about the St. Louis Bay Wreck (21-HE-422) is a solid beginning from which to base further documentation and assessments. The St. Louis Bay Wreck joins the Gideon Bay Wreck (21-HE-415) and the Wayzata Bay Rowboat Wreck (21-HE-417) as part of the growing fleet of locally-built small craft that sank in Lake Minnetonka. Yet, all of these boats are of different designs and attest to the variety of human-propelled watercraft that plied Minnesota's waters over 100 years ago.

Lastly, the White Chevrolet Caprice Classic Two Door Coupe (Anomaly 57), is the least significant site located during the LMNA-2 Project and probably represents a fisherman's bad luck. While there may be another explanation for the car's demise, MHM will leave that determination up to the HCSWP. Further, if the HCSWP utilizes the car for search and rescue training, MHM would be interested in chronicling the site over the years to explain how, why, and when any particular changes occurred for the maritime historical record of Lake Minnetonka.

Maritime Heritage Minnesota has considered specific plans of action for future maritime historical and nautical archaeological work in both Upper and Lower Lake Minnetonka. It is evident through MHM's investigations of the wrecks and anomalies during the LMNA-1 and LMNA-2 Projects that an on-going re-examination of recorded sonar footage from the LMS-1 and LMS-2 Projects may reveal additional anomalies that were initially judged less likely to be cultural resources. Therefore, the results from the LMNA-2 Project is connected to all the work that came before and will come after its completion.

Nearly 100 anomalies located on the bottom of Lake Minnetonka remain to be identified. Future work advocated by MHM is in keeping with the recommendations submitted to the SHPO in 1997 concerning the historical significance of Lake Minnetonka's wrecks – those known and unknown. As stated in the report, it was determined that "each of the individual vessels [*Como*, *George/Excelsior*, *Hercules*, *Hopkins/Minnetonka*, *Minneapolis*, *White Bear*] are potentially eligible for nomination to the National Register of Historic Places (NRHP) under criteria A, C, and D. As a group, these vessels...form a strong and important submerged cultural resource. The historic shipwrecks in Lake Minnetonka may be the single most well-preserved group of excursion vessels in the United States" (Hall, Birk, and Newell 1997, 62).

The 'excursion' vessel classification is too broad to typify the wrecks considered by the SHPO since the Streetcar Boats were actually part of the public transportation system, not 'pleasure' boats. At the same time, 'excursion' is too narrow a term as well considering the number of diverse wreck types MHM has identified between 2011-2013 that were personal watercraft, commercial vessels, and workboats. Therefore, MHM

contends Lake Minnetonka's wrecks have more potential for NRHP consideration than determined by previous scholars. In turn, MHM recognizes the wrecks by their nautical construction attributes, materials used, propulsion, and design, not exclusively by their presumed function. With this consideration, to date MHM has recognized 21 watercraft types among the 28 wrecks located in Lake Minnetonka: 1 un-powered wooden model barge; 1 wooden rounded stern propeller steamer; 1 un-powered wooden steam dredge; 1 capsized wooden boat with slot head wood screws; 3 wooden rowboats; 3 torpedo stern wooden steam propellers; 1 wooden sternwheel steamer; 1 wooden sidewheel steamer; 2 wooden steam (originally, 1 converted to internal combustion) propeller tugs; 1 metal and wood motorized ice boat; 3 inboard wooden boats; 1 outboard speedboat of uncertain construction; 1 outboard aluminum runabout; 1 inboard wooden cruiser; 1 fiberglass outboard speedboat with fins; 1 fiberglass inboard speedboat; 1 aluminum canoe; 1 outboard aluminum fishing boat; 1 outboard amphibious houseboat; 1 un-powered metal barge; and 1 pontoon boat. The three different types of maritime sites recognized thus far include: 1 steamboat pier at Big Island; 3 marine launch boilers; 1 pontoon raft; a 1955 Mercury Monterey Four-Door Sedan; and a 1974 White Chevrolet Caprice Classic Two-Door Coupe. It is obvious that the types of sites that exist in Lake Minnetonka are diverse, archaeologically and historically significant, and worthy of great attention. The data collected during the LMNA-1 and LMNA-2 Projects are part of the first phase that will allow the development of a Historic Shipwreck or Maritime District nomination for Lake Minnetonka – a first for the State of Minnesota – and if appropriate, a State Underwater Archaeological Park.

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